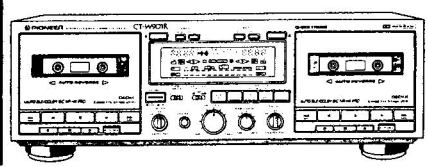
PIONEER®
The Art of Entertainment

Service Manual



STEREO DOUBLE CASSETTE DECK

CT-W901R
CT-W951R

CT-W901R AND CT-W951R HAVE THE FOLLOWING:

Type	Model		Power Requirement	Remarks
	CT-W901R	CT-W951R		
KUC	○	–	AC120V only	
HEM	○	–	AC220V–230V, 240V (switchable)*	
HB	○	–	AC220V–230V, 240V (switchable)*	
SD	–	○	AC110V, 120V–127V, 220V, 240V (switchable)	

* Change the primary wiring of the power transformer.

- **This manual is applicable to the following: CT-W901R/KUC, HEM and HB; CT-W951R/SD.**
- **As to the CT-W901R/HEM, HB and CT-W951R/SD types, refer to page 37.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

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This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

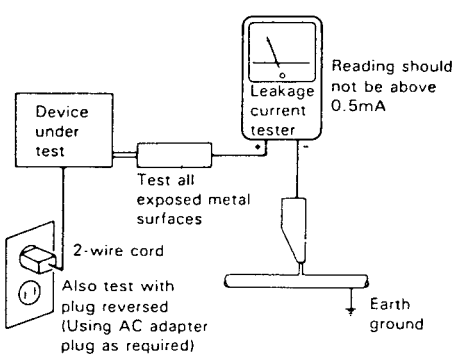
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Leakage current tester
Reading should not be above 0.5mA
Device under test
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE'

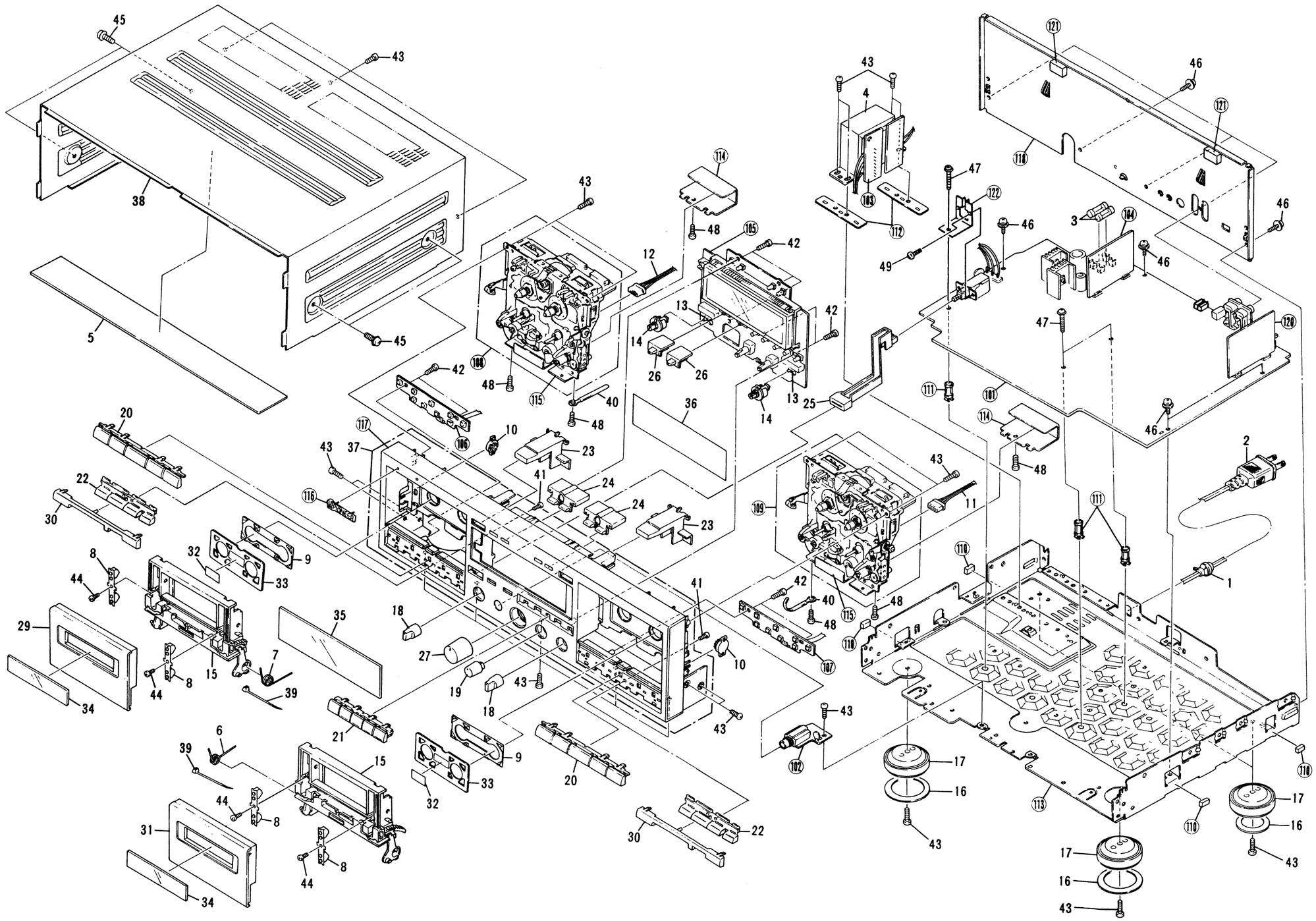
Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

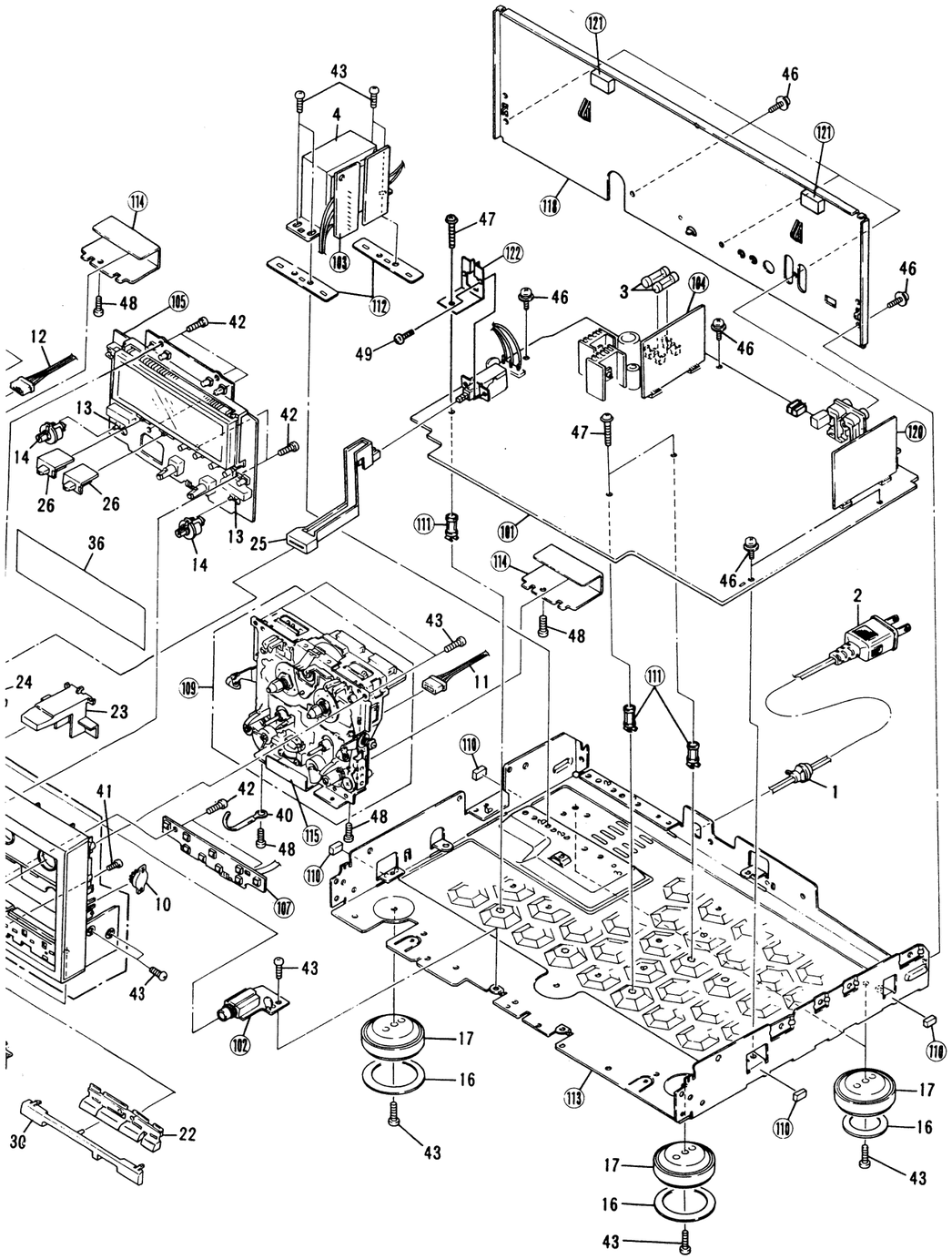
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

2.1 EXTERIOR





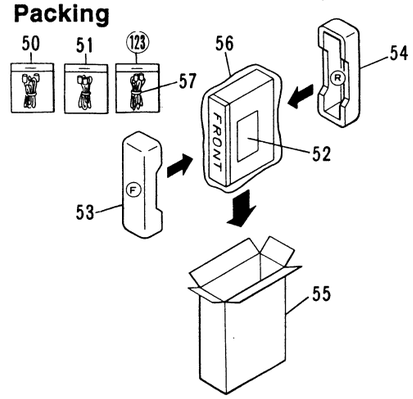
NOTES:

- The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List of Exterior

Mark	No.	Description	Part No.
⚠	1	Strain relief	CM – 22C
⚠	2	AC Power cord	PDG1015
⚠	3	FU1001, FU1002 Fuse (1.5A)	REK1001
⚠	4	Power transformer	RTT1162
	5	Absorb plate (B)	PNB1109
	6	Door spring (L)	RBH1224
	7	Door spring (R)	RBH1225
	8	Half pressure spring	RBK1013
	9	Stabilizer (B)	REB1085
	10	Damper assembly	REC1005
	11	Connector assembly 5P	RKP1323
	12	Connector assembly 5P	RKP1332
	13	SW cap	RNK1522
	14	Rotary SW shaft	RNK1523
	15	Door pocket	RNT1010
	16	Stopper	VEC1061
	17	Insulator	VNK1095
	18	Knob B (DOLBY NR)	RAC1414
	19	VR knob B (COPY LEVEL)	RAC1421
	20	Operation knob A (◀◀, ◀, ■, ▶, ▶▶)	RAC1479
	21	Operation knob C (SYNCHRO COPY)	RAC1423
	22	BLE knob (●, ❚❚, ●, AUTO – BLE)	RAC1601
	23	Eject knob	RAC1480
	24	Counter knob	RAC1426
	25	Power knob	RAC1427
	26	Slide knob (TIMER MODE, REVERSE MODE)	RAC1428
	27	VR knob A(REC LEVEL)	RAC1430
	28	·····	
	29	Door cover	RAH1999
	30	BLE mold	RAH1729
	31	Door cover	RAH2000
	32	Remain display paper	REE – 113
	33	Stabilizer panel	RAH1483
	34	Door lens	RAH1553
	35	FL lens	RAH1594
	36	FL filter	RAH1596
	37	Front panel assembly	RXX1462
	38	Bonnet	RXX1297
	39	Binder	REC – 371
	40	Cord clamper	RNH – 184
	41	Screw	BBZ20P060FMC
	42	Screw	BBZ30P060FZK
	43	Screw	BBZ30P080FCC
	44	Screw	BPZ20P060FMC
	45	Screw	FBT40P080FZK
	46	Screw	IBZ30P060FCC
	47	Screw	IBZ30P150FCU
	48	Screw	BCZ26P050FMC
	49	Screw	PMA30P060FCU
	50	Mini connection cord	PDE – 319
	51	Control cord	RDE1030
	52	Operating instructions (English/French)	RRE1053
	53	Pad F	RHA1044
	54	Pad R	RHA1045
	55	Packing case	RHG1323
	56	Sheet	RHX – 034
	57	Connection cord	RDE – 010
	101	Main unit	RWZ2592
	102	H.Phone unit	RWZ2644
	103	TR SEC unit	RWZ2645
⊙	104	REC (1) unit	RWX1064
	105	Display unit	RWZ2641
	106	Operate (1) unit	RWZ2646
	107	Operate (2) unit	RWZ2647
⊙	108	Mechanism unit (Deck I)	RYM1179
⊙	109	Mechanism unit (Deck II)	RYM1180
	110	Spacer	PEB1027
	111	PCB spacer	PNY – 404
	112	Transformer sheet	REE1014
	113	Main chassis	RNB1018
	114	Mechanism shield plate	RNE1306
	115	Mechanism bracket	RNE1332
	116	Name plate	PAN1035
	117	Front panel	RAH2002
	118	Rear panel	RNA1523
	119	·····	
⊙	120	REC (2) unit	RWX1070
	121	UNIT spacer	REB1072
	122	SW bracket	RNE1377
	123	Connection cord assembly	RDE1002

Packing



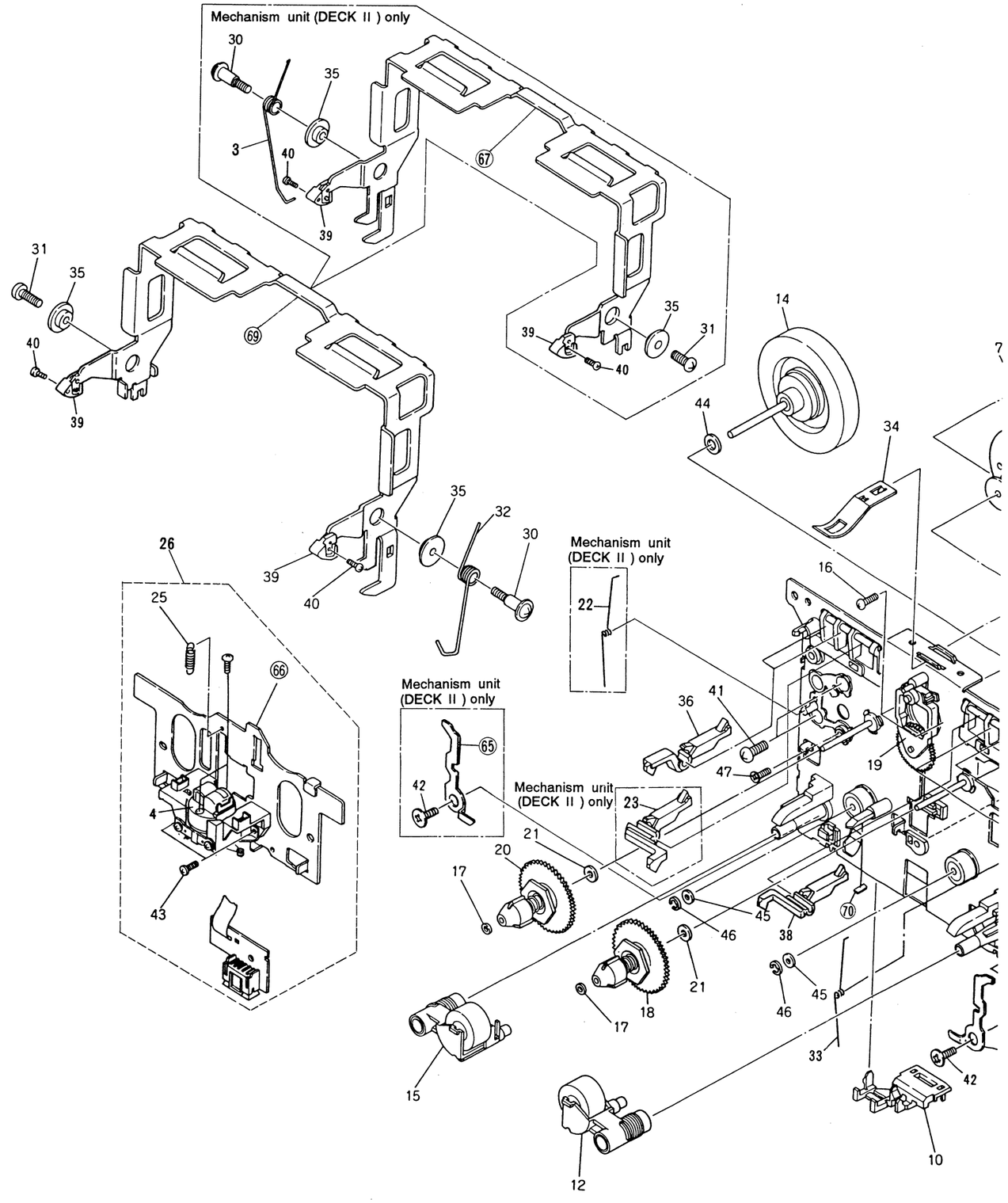
2.2 MECHANISM UNIT (DECK I and II)

Parts List

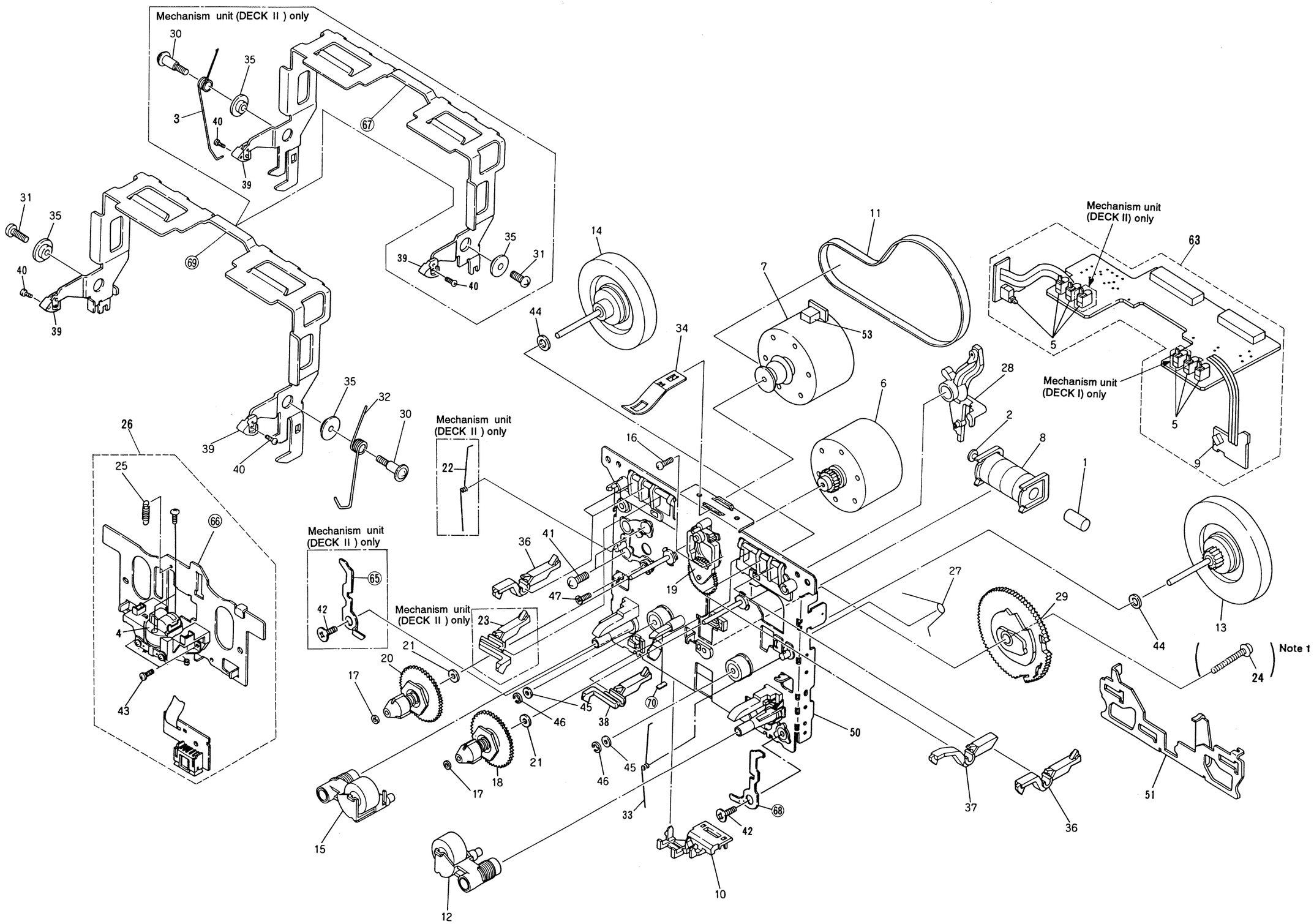
Mark	No.	Description	Part No.
	1	Shaft	RLA1130
	2	Planger	RLA1132
	3	Eject lever spring (L)	RBH1231 (DECK II only)
	4	R/P, E head	RPB1030
	5	Push switch	RSG1018
	6	Reel motor (BLK)	RXM1029
	7	Main motor (BLK)	RXM1030
	8	Solenoid (BLK)	RXP1010
	9	Photo transistor	SPI33534FG
	10	Wire holder	RNK1530
	11	Main belt	REB1157
	12	Pinch roller assembly (DIA 2.5)	RXA1183
	13	Flywheel assembly	RXA1294
	14	Flywheel assembly	RXA1295
	15	Pinch roller assembly(L)	RXA1296
	16	Screw	RBA1076
	17	Washer	RBF – 057
	18	Reel base (BLK)	RXA1184
	19	Idler (BLK)	RXA1248
	20	Reel base (BLK)	RXC – 040
	21	Washer	RBF1038
	22	Eject prevention spring (L)	RBH1234 (DECK II only)
	23	Metal detection lever (L)	RNK1529 (DECK II only)
	24	Screw	RBA1068
	25	Head base spring	RBL1003
	26	Plate HD BLK	RXA1481
	27	Slide spring	RBH1239
	28	Play arm	RNK1525
	29	Cam gear (3R)	RNK1672
	30	Screw	RBA1078
	31	Screw	RBA1079
	32	Eject lever spring (R)	RBH1233 (DECK I only)
	33	Eject prevention spring (R)	RBH1230 (DECK I only)
	34	Cassette hold spring	RBK1031
	35	Lever collar (A)	RLA1133
	36	REC detection lever	RNK1527
	37	PACK detection lever(P)	RNK1543
	38	Metal detection lever(R)	RNK1537 (DECK I only)
	39	Hook	RNM – 160
	40	Screw	PCZ20P040FMC
	41	Screw	PMA26P050FMC
	42	Screw	RBA1048
	43	Screw	RBA1077
	44	Washer	WA26D045D025
	45	Washer	WA26D047D050
	46	Washer	YE15FUC
	47	Screw	RBA1101
	48	.....	
	49	.....	
	50	Chassis base (BLK)	RXA1480
	51	Slide plate	RNE1345
	52	.....	
	53	Holder cushion (L)	RED1027
	60	.....	
	61	.....	
	62	.....	
	63	PCB control BLK	RXA1478 (DECK I) RXA1479 (DECK II)
	64	.....	
	65	Eject prevention arm (L)	RNE1263 (DECK II only)
	66	Head base	RNE1343
	67	Eject lever (WL)	RNE1321 (DECK II only)
	68	Eject prevention arm (R)	RNE1271 (DECK I only)
	69	Eject lever (WR)	RNE1328 (DECK I only)

Note 1 : The screw No. 24 is the part to hold the cam gear for servicing, when the hook holding the cam No. 29 is broken.

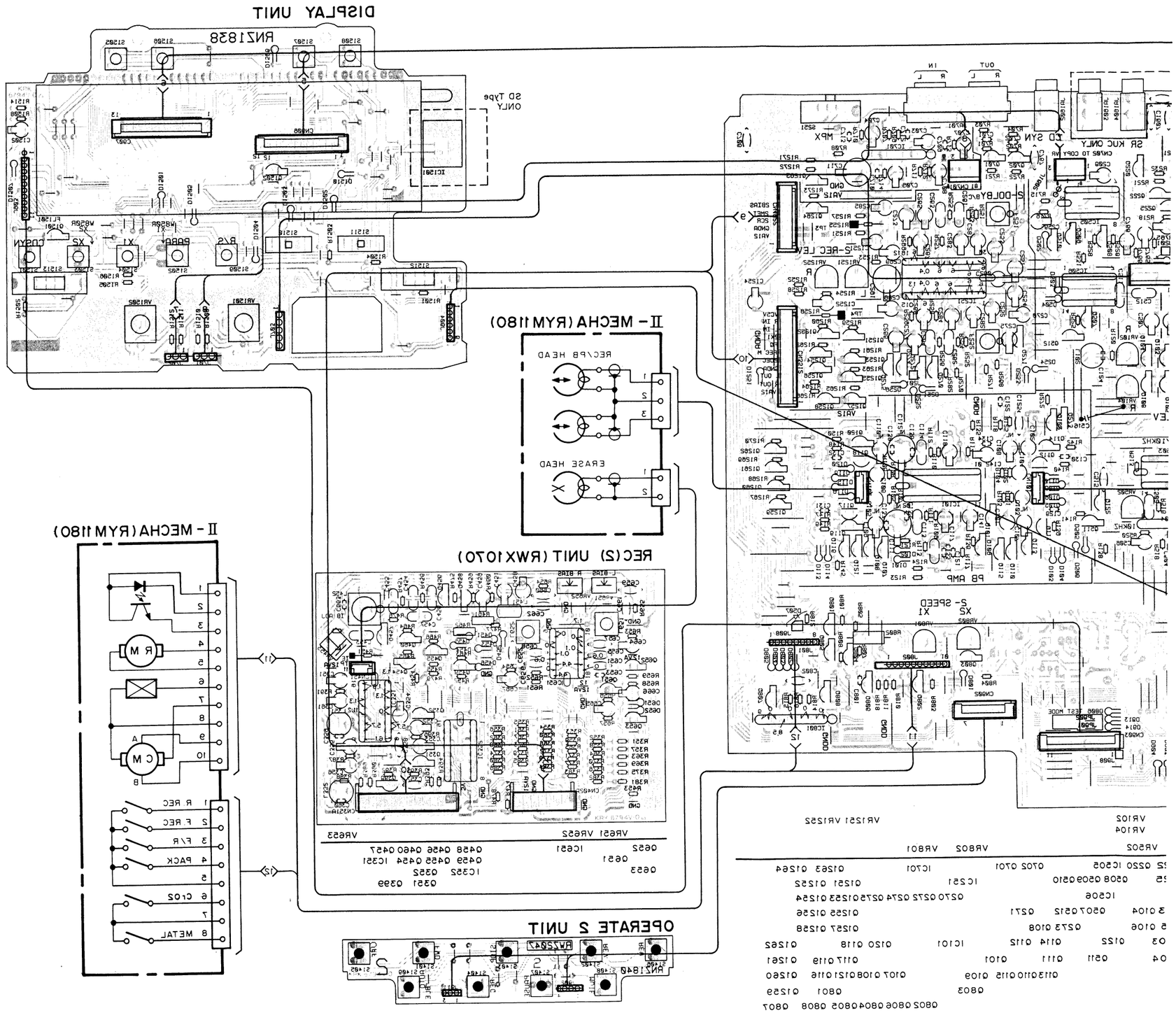
Mechanism unit (DECK I and DECK II)

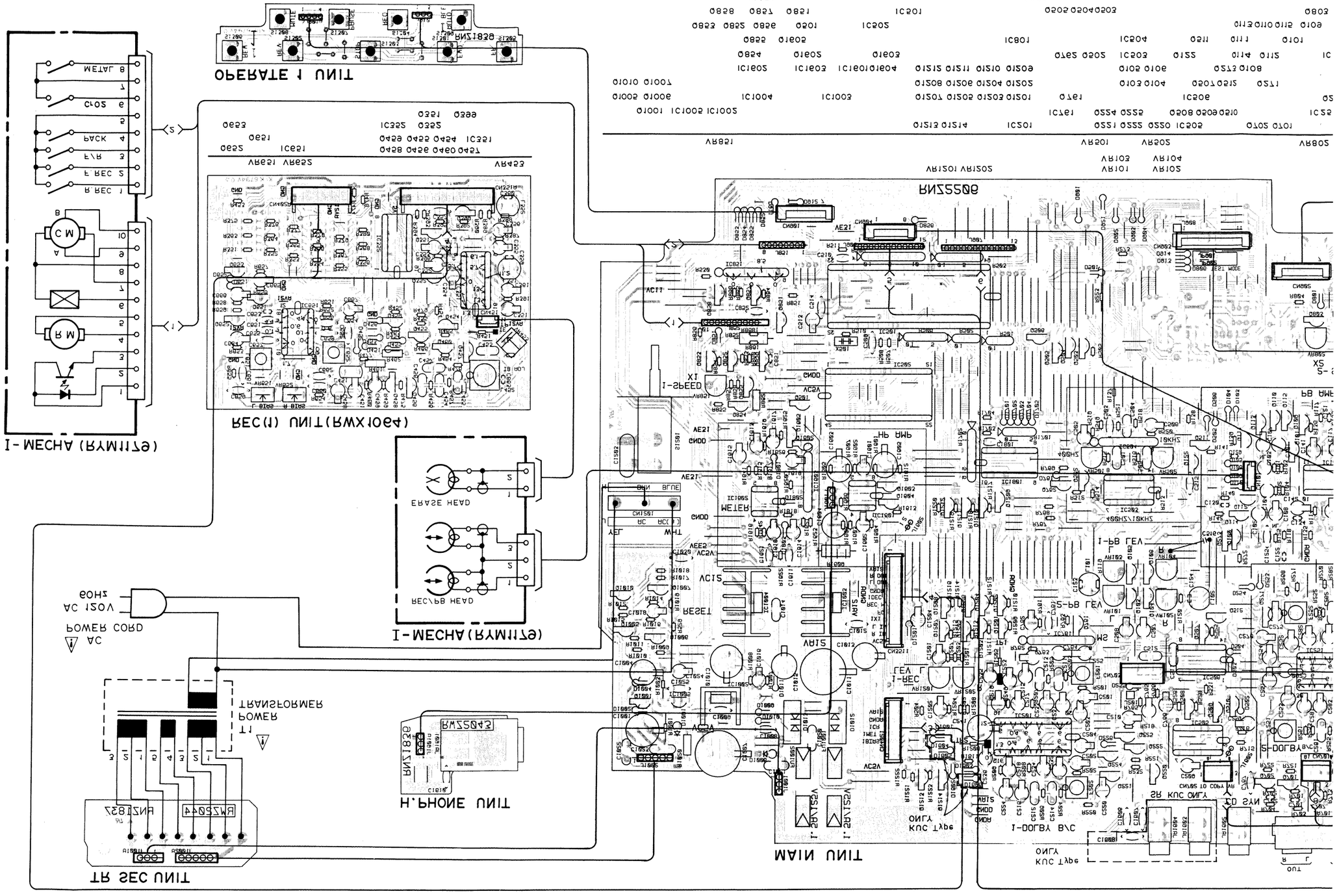


Mechanism unit (DECK I and DECK II)


Mechanism unit (DECK II) only
Mechanism unit (DECK II) only
Mechanism unit (DECK II) only
Mechanism unit (DECK II) only
Mechanism unit (DECK II) only
Mechanism unit (DECK I) only
Note 1

3. PCB CONNECTION DIAGRAMS





• View from soldering side

RT-W90

• View from component side

TR SEC UNIT

RNZ1837

RWZ2044

T1
POWER
TRANSFORMER

AC
POWER CORD

AC 120V
60Hz

H.PHONE UNIT

RNZ1836

RWZ2043

I-MECHA (RYM1179)

REC/PB HEAD

ERASE HEAD

I-MECHA (RYM1179)

R M

C M

R.REC

F.REC

F/R

PACK

Cr02

METAL

REC(1) UNIT(RWX1064)

VR651 VR652 VR453

Q652 IC651 Q458 Q456 Q460 Q457
Q651 Q459 Q455 Q454 IC351
Q653 IC352 Q352
Q351 Q399

OPERATE 1 UNIT

RNZ1839

MAIN UNIT

KUC Type ONLY

1-DOLBY B/C

SR KUC ONLY

ED SYN

2-DOLBY B/C

1-REC LEV L

1-REC LEV R

2-PB LEV

1-PB LEV

MS

RESET

METER

HP AMP

PB AMP

1-SPEED X1

2-SPEED X2

TEST MODE

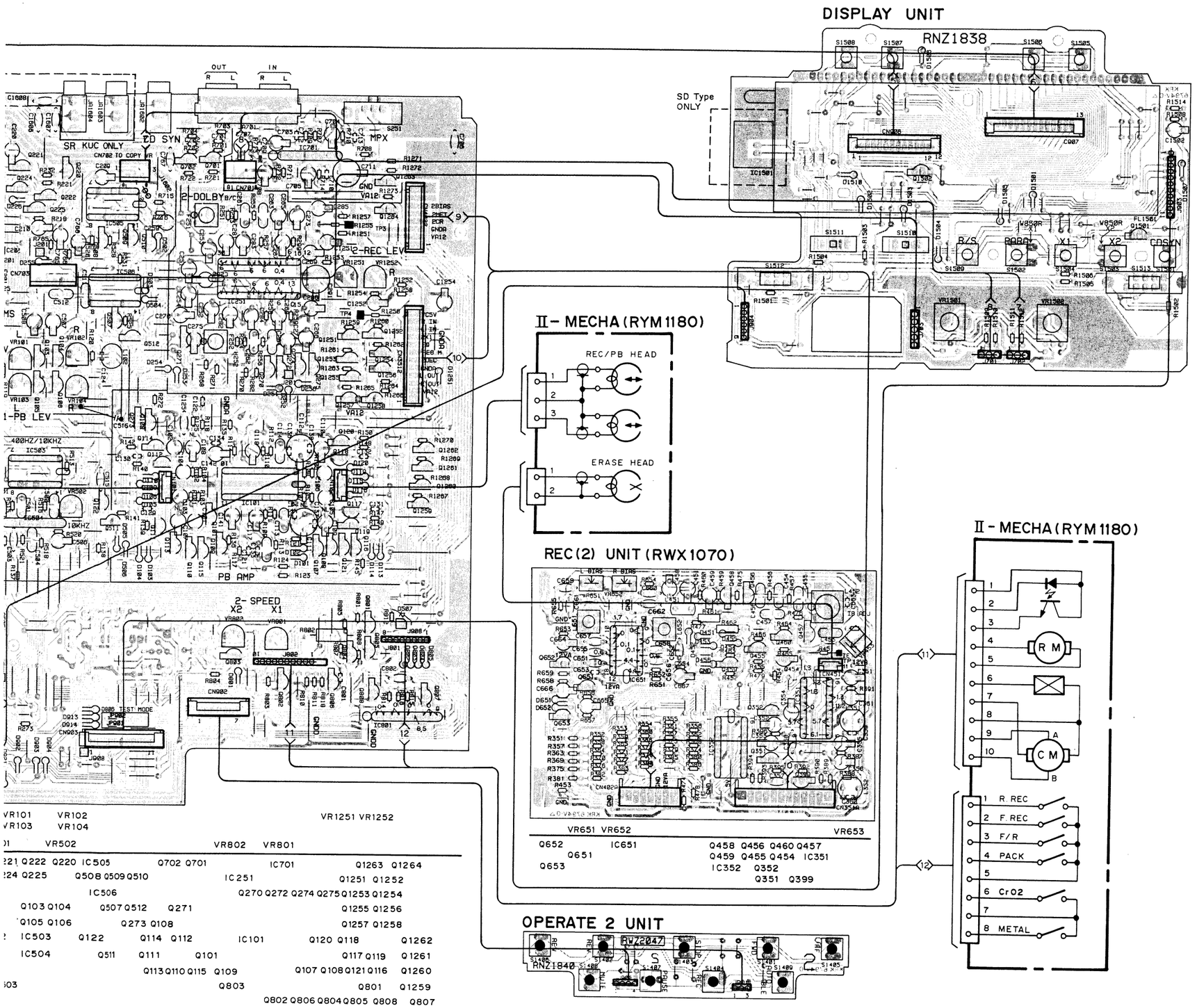
RNZ2206

VR1201 VR1202 VR101 VR102 VR103 VR104

VR851 VR501 VR502 VR802

Q1001 IC1005 IC1002
Q1005 Q1006 IC1004 IC1003
Q1010 Q1007
IC1602 IC1603 IC1601 Q1604
Q854 Q1602 Q1603
Q855 Q1605
Q853 Q852 Q856 Q501 IC502
Q858 Q857 Q851 IC501
IC851

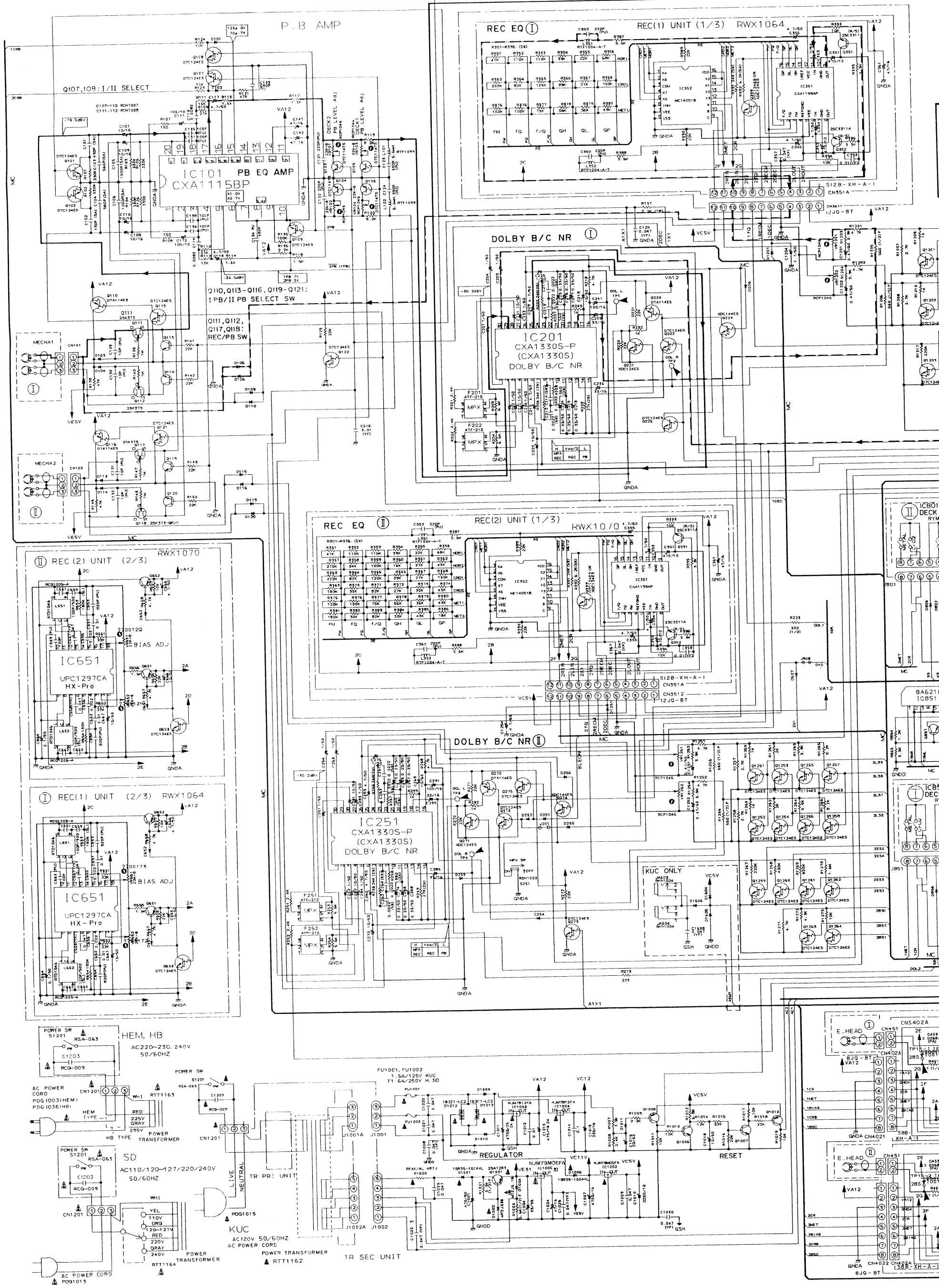
Q1213 Q1214 IC201 Q221 Q222 Q220 IC505 Q702 Q701
IC761 Q224 Q225 Q508 Q509 Q510 IC251
Q1207 Q1205 Q1203 Q1201 Q761 IC506 Q2
Q1208 Q1206 Q1204 Q1202 Q103 Q104 Q507 Q512 Q271
Q1212 Q1211 Q1210 Q1209 Q105 Q106 Q273 Q108
Q762 Q502 IC503 Q122 Q114 Q112 IC1
IC801 IC504 Q511 Q111 Q101
Q113 Q110 Q115 Q109
Q505 Q504 Q503 Q803
Q506



P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with O shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

4. SCHEMATIC DIAGRAM



1. RESISTORS :
Indicated in Ω, 1/6W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.

2. CAPACITORS :
Indicated in capacity (μF) / voltage (V) unless otherwise noted p ; pF.
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE CURRENT :
; DC voltage (V) at no input signal.
mA ; DC current at no input signal.

4. OTHERS :
➔ ; Signal route.
⊘ ; Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

1SS254 DTC124ES DTA114ES
2SA1309A DTA114TS DTC114ES
2SC3311A DTC114TS

MAIN UNIT

DISPLAY UNIT (2/2)

H. PHONE AMP

H. PHONE UNIT

MUSIC SEARCH

LEVEL SW

400Hz LEVEL ADJ.

10kHz LEVEL ADJ.

10kHz Buffer AMP

SYSTEM CONTROL

METER AMP

DISPLAY UNIT (1/2)

RAW1103 (H)
RAW1104 (KUC, SD)

SD ONLY

DOLBY SW

TAPE SPEED ADJ

REC(1) UNIT (3/3) Metal IE Adj. RWX1064

REC(2) UNIT (3/3) Metal IE Adj. RWX1070

OPERATE1 UNIT

OPERATE2 UNIT

: PLAYBACK SIGNAL
: RECORDING SIGNAL
: MEASUREMENT POINT

5. PCB PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%)

560 Ω → 56 × 10¹ → 561 ····· RD1/4PS 5 6 1 J
47k Ω → 47 × 10³ → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 ····· RN1/4SR 5 6 2 1 F

Mark	No.	Description	Part No.

LIST OF ASSEMBLIES

⊙	MATHER UNIT	RWM1509
	├ MAIN UNIT	
	├ H. PONE UNIT	
	└ TR SEC UNIT	
⊙	SUB UNIT	RWM1512
	├ DISPLAY UNIT	
	├ OPERATE (1)UNIT	
	└ OPERATE (2)UNIT	
⊙	REC (1)UNIT	RWX1064
⊙	REC (2)UNIT	RWX1070

⊙ REC (2) UNIT (RWX1070)

SEMICONDUCTORS

IC351 REC EQUALIZER IC	CXA1198AP-A
IC352 LOGIC IC	MC14051BCP
IC651 DOLBY HX PRO IC	UPC1297CA
Q351, 352 TRANSISTOR	2SC3311A
Q399 TRANSISTOR	XDC124ES
Q454, 455 TRANSISTOR	2SC3311A
Q456-458 TRANSISTOR	2SC1815
Q459, 460 TRANSISTOR	2SB1238X
Q651, 652 TRANSISTOR	2SA1309A
Q653 TRANSISTOR	XDC124ES
D451 DIODE	1SS254
D452 DIODE	1SS252
D453-456 DIODE	1SS254
D651, 652 DIODE	1SS254

COILS/TRANSFORMERS

L351, 352 COIL	RTF1004
L451 RADIAL INDUCTOR	LFA121K
L452	RTD1048
L651, 652 COIL	RTD1046

CAPACITORS

C351, 352 ELECTR. CAPACITOR	CEAS471M10
C353-356 ELECTR. CAPACITOR	CEAS4R7M50
C357 CERAMIC CAPACITOR	CKCYF473Z50
C358 CERAMIC CAPACITOR	CKCYF103Z50
C359, 360 AXIAL CAPACITOR	CKPUYB221K50
C361 ELECTR. CAPACITOR	CEAS470M16
C451 ELECTR. CAPACITOR	CEAS330M35
C453 CAPACITOR	CQPA682J100
C454 AUDIO FILM CAPACITOR	CFTXA223J50
C455-457 AUDIO FILM CAPACITOR	CFTXA332J50
C458 ELECTR. CAPACITOR	CEAS330M35
C459 ELECTR. CAPACITOR	CEAS470M16
C651, 652 AUDIO FILM CAPACITOR	CFTXA103J50
C653, 654 AXIAL CAPACITOR	CKPUYB821K50
C655, 656 AUDIO FILM CAPACITOR	CFTXA223J50
C657, 658 CERAMIC CAPACITOR	CGCYX473K25
C659, 660 CERAMIC CAPACITOR	CCCSL101K500
C661, 662 CERAMIC CAPACITOR(430p)	RCG1005
C663 AXIAL CAPACITOR	CKPUYB101K50
C664 ELECTR. CAPACITOR	CEASR10M50
C665 ELECTR. CAPACITOR	CEAS100M50
C666 ELECTR. CAPACITOR	CEAS4R7M50
C667 ELECTR. CAPACITOR	CEAS100M50

RESISTORS

R351-396 CARBONFILM RESISTOR	RD1/6PM□□□J
R451 CARBONFILM RESISTOR	RD1/2LF□□□J
R452-457 CARBONFILM RESISTOR	RD1/6PM□□□J
R459, 460 CARBONFILM RESISTOR	RD1/6PM□□□J
R461, 462 CARBONFILM RESISTOR	RD1/2LF□□□J
R463-466 CARBONFILM RESISTOR	RD1/6PM□□□J
R474-479 CARBONFILM RESISTOR	RD1/6PM□□□J
R651-659 CARBONFILM RESISTOR	RD1/6PM□□□J
VR453 VARIABLE RESISTOR(100Ω)	RCP1013
VR651, 652 VR	VRTB6HS223

OTHERS

CN351	S12B-XH-A-1
CN402	S8B-XH-A-1

Mark	No.	Description	Part No.

⊙ REC (1) UNIT (RWX1064)

SEMICONDUCTORS

IC351 REC EQUALIZER IC	CXA1198AP
IC352	MC14051BCP
IC651 DOLBY HX PRO IC	UPC1297CA
Q351, 352 TRANSISTOR	2SC3311A
Q399 TRANSISTOR	XDC124ES
Q454, 455 TRANSISTOR	2SC3311A
Q456-458 TRANSISTOR	2SC1815
Q459, 460 TRANSISTOR	2SB1238X
Q651, 652 TRANSISTOR	2SA1309A
Q653 TRANSISTOR	XDC124ES
D451 DIODE	1SS254
D452 DIODE	1SS252
D453-456 DIODE	1SS254
D651, 652 DIODE	1SS254

COILS/TRANSFORMERS

L351, 352 COIL	RTF1004
L451 RADIAL INDUCTOR	LFA121K
L452	RTD1048
L651, 652 COIL	RTD1046

CAPACITORS

C351, 352 ELECTR. CAPACITOR	CEAS471M10
C353-356 ELECTR. CAPACITOR	CEAS4R7M50
C357 CERAMIC CAPACITOR	CKCYF473Z50
C358 CERAMIC CAPACITOR	CKCYF103Z50
C359, 360 AXIAL CAPACITOR	CKPUYB221K50
C361 ELECTR. CAPACITOR	CEAS470M16
C451 ELECTR. CAPACITOR	CEAS330M35
C453 CAPACITOR	CQPA682J100
C454 AUDIO FILM CAPACITOR	CFTXA223J50
C455-457 AUDIO FILM CAPACITOR	CFTXA332J50
C458 ELECTR. CAPACITOR	CEAS330M35
C459 ELECTR. CAPACITOR	CEAS470M16
C651, 652 AUDIO FILM CAPACITOR	CFTXA103J50
C653, 654 AXIAL CAPACITOR	CKPUYB821K50
C655, 656 AUDIO FILM CAPACITOR	CFTXA223J50
C657, 658 CERAMIC CAPACITOR	CGCYX473K25
C659, 660 CERAMIC CAPACITOR	CCCSL101K500
C661, 662 CERAMIC CAPACITOR(430p)	RCG1005
C663 AXIAL CAPACITOR	CKPUYB101K50
C664 ELECTR. CAPACITOR	CEASR10M50
C665 ELECTR. CAPACITOR	CEAS100M50
C666 ELECTR. CAPACITOR	CEAS4R7M50
C667 ELECTR. CAPACITOR	CEAS100M50

RESISTORS

R351-356 CARBONFILM RESISTOR	RD1/6PM□□□J
R363-368 CARBONFILM RESISTOR	RD1/6PM□□□J
R375-380 CARBONFILM RESISTOR	RD1/6PM□□□J
R387-396 CARBONFILM RESISTOR	RD1/6PM□□□J
R451 CARBONFILM RESISTOR	RD1/2LF□□□J
R452-457 CARBONFILM RESISTOR	RD1/6PM□□□J
R459, 460 CARBONFILM RESISTOR	RD1/6PM□□□J
R461, 462 CARBONFILM RESISTOR	RD1/2LF□□□J

Mark	No.	Description	Part No.
	R463-466 CARBONFILM RESISTOR		RD1/6PM□□□J
	R474-479 CARBONFILM RESISTOR		RD1/6PM□□□J
	R651-659 CARBONFILM RESISTOR		RD1/6PM□□□J
	VR453 VARIABLE RESISTOR(100Ω)		RCP1013
	VR651, 652 VR		VRTB6HS223

OTHERS

	CN351	S12B-XH-A-1
	CN402	S8B-XH-A-1

MAIN UNIT

SEMICONDUCTORS

	IC101 PB-EQ AMP IC	CXA1115BP
	IC201 DOLBY B/C IC	CXA1330S
	IC251 DOLBY B/C IC	CXA1330S
	IC501	PD4296A
	IC502 FL STATIC DRIVER IC	LC7570
	IC503 LOGIC IC	TC4066BP
	IC504 IC	BA15218N
	IC505, 506 LOGIC IC	TC4066BP
	IC701 IC	BA15218N
	IC761 IC	BA335
	IC801 IC	BA6218
	IC851 IC	BA6218
⚠	IC1002 REGULATOR IC	NJM78M05FA
⚠	IC1003, 1004 REGULATOR IC	NJM7812FA
⚠	IC1005 REGULATOR IC	NJM79M05FA
	IC1601, 1602 OP-AMP IC	BA15218
	IC1603 DUAL-COMPARATOR IC	M5233L
	IC1801 CMOS LOGIC IC	TC4050BP
	Q101, 102 TRANSISTOR	XDC124ES
	Q103-106 DIGITAL TRANSISTOR	DTC114TS
	Q107-109 TRANSISTOR	XDC124ES
	Q110 DIGITAL TRANSISTOR	XDA114ES
	Q111, 112 N-FET	2SK373
	Q113, 114 TRANSISTOR	2SC3311A
	Q115 TRANSISTOR	XDC124ES
	Q116 DIGITAL TRANSISTOR	XDA114ES
	Q117, 118 N-FET	2SK373
	Q119, 120 TRANSISTOR	2SC3311A
	Q121, 122 TRANSISTOR	XDC124ES
	Q220 DIGITAL TRANSISTOR	XDA114ES
	Q221, 222 TRANSISTOR	XDC124ES
	Q224 DIGITAL TRANSISTOR	XDC144ES
	Q225 TRANSISTOR	XDC124ES
	Q270 DIGITAL TRANSISTOR	XDA114ES
	Q271-273 TRANSISTOR	XDC124ES
	Q274 DIGITAL TRANSISTOR	XDC144ES
	Q275 TRANSISTOR	XDC124ES
	Q501-506 TRANSISTOR	XDC124ES
	Q507 DIGITAL TRANSISTOR	XDC114ES
	Q508 DIGITAL TRANSISTOR	DTA114TS
	Q509 TRANSISTOR	XDC124ES
	Q510 TRANSISTOR	2SA1309A
	Q511 TRANSISTOR	XDC124ES

Mark	No.
	Q512 DIGITAL
	Q701, 702 TRAN
	Q761 DIGITAL
	Q762 DIGITAL
	Q801-803 TRAN
	Q804 DIGITAL
	Q805 TRANSIST
	Q806 TRANSIST
	Q807 TRANSIST
	Q808 DIGITAL
	Q851-853 TRAN
	Q854 DIGITAL
	Q855 TRANSIST
	Q856 TRANSIST
	Q857 TRANSIST
	Q858 DIGITAL
⚠	Q1001 TRANSIS
	Q1005 TRANSIS
	Q1006, 1007 TR
	Q1010 TRANSIS
	Q1201-1214 TR
	Q1251-1264 TR
	Q1602 DIGITAL
	Q1603, 1604 TR
	Q1605 DIGITAL
	D101-106 DIODE
	D109, 110 DIODE
	D113-116 DIODE
	D119, 120 DIODE
	D226 DIODE
	D251-256 DIODE
	D501 ZENER DIO
	D502-507 DIODE
	D761 ZENER DIO
	D801 DIODE
	D802-806 DIODE
	D851 DIODE
	D852-856 DIODE
	D901-904 DIODE
	D911-914 DIODE
	D921 DIODE
⚠	D1001 DIODE
⚠	D1002 ZENER DI
	D1004 ZENER DI
⚠	D1006 DIODE
	D1009-1011 DIO
⚠	D1012 POWER DI
⚠	D1013 POWER DI
	D1201 DIODE
	D1251 DIODE
	D1601-1606 DIO
	D1701-1705 DIO
	D1801-1803 DIO

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5%, and K=10%)

Part No.
F103Z50
YB221K50
470M16
330M35
682J100
A223J50
A332J50
330M35
470M16
A103J50
YB821K50
A223J50
X473K25
L101K500
005
YB101K50
R10M50
100M50
4R7M50
100M50
6PM□□□J
2LF□□□J
6PM□□□J
6PM□□□J
2LF□□□J
6PM□□□J
6PM□□□J
6PM□□□J
013
6HS223
XH-A-1
H-A-1

Mark	No.	Description	Part No.

⊙ REC (1) UNIT (RWX1064)

SEMICONDUCTORS

	IC351 REC EQUALIZER IC	CXA1198AP
	IC352	MC14051BCP
	IC651 DOLBY HX PRO IC	UPC1297CA
	Q351, 352 TRANSISTOR	2SC3311A
	Q399 TRANSISTOR	XDC124ES
	Q454, 455 TRANSISTOR	2SC3311A
	Q456-458 TRANSISTOR	2SC1815
	Q459, 460 TRANSISTOR	2SB1238X
	Q651, 652 TRANSISTOR	2SA1309A
	Q653 TRANSISTOR	XDC124ES
	D451 DIODE	1SS254
	D452 DIODE	1SS252
	D453-456 DIODE	1SS254
	D651, 652 DIODE	1SS254

COILS/TRANSFORMERS

	L351, 352 COIL	RTF1004
	L451 RADIAL INDUCTOR	LFA121K
	L452	RTD1048
	L651, 652 COIL	RTD1046

CAPACITORS

	C351, 352 ELECTR. CAPACITOR	CEAS471M10
	C353-356 ELECTR. CAPACITOR	CEAS4R7M50
	C357 CERAMIC CAPACITOR	CKCYF473Z50
	C358 CERAMIC CAPACITOR	CKCYF103Z50
	C359, 360 AXIAL CAPACITOR	CKPUYB221K50
	C361 ELECTR. CAPACITOR	CEAS470M16
	C451 ELECTR. CAPACITOR	CEAS330M35
	C453 CAPACITOR	CQPA682J100
	C454 AUDIO FILM CAPACITOR	CFTXA223J50
	C455-457 AUDIO FILM CAPACITOR	CFTXA332J50
	C458 ELECTR. CAPACITOR	CEAS330M35
	C459 ELECTR. CAPACITOR	CEAS470M16
	C651, 652 AUDIO FILM CAPACITOR	CFTXA103J50
	C653, 654 AXIAL CAPACITOR	CKPUYB821K50
	C655, 656 AUDIO FILM CAPACITOR	CFTXA223J50
	C657, 658 CERAMIC CAPACITOR	CGCYX473K25
	C659, 660 CERAMIC CAPACITOR	CCCSL101K500
	C661, 662 CERAMIC CAPACITOR(430p)	RCG1005
	C663 AXIAL CAPACITOR	CKPUYB101K50
	C664 ELECTR. CAPACITOR	CEASR10M50
	C665 ELECTR. CAPACITOR	CEAS100M50
	C666 ELECTR. CAPACITOR	CEAS4R7M50
	C667 ELECTR. CAPACITOR	CEAS100M50

RESISTORS

	R351-356 CARBONFILM RESISTOR	RD1/6PM□□□J
	R363-368 CARBONFILM RESISTOR	RD1/6PM□□□J
	R375-380 CARBONFILM RESISTOR	RD1/6PM□□□J
	R387-396 CARBONFILM RESISTOR	RD1/6PM□□□J
	R451 CARBONFILM RESISTOR	RD1/2LF□□□J
	R452-457 CARBONFILM RESISTOR	RD1/6PM□□□J
	R459, 460 CARBONFILM RESISTOR	RD1/6PM□□□J
	R461, 462 CARBONFILM RESISTOR	RD1/2LF□□□J
	R463-466 CARBONFILM RESISTOR	RD1/6PM□□□J
	R474-479 CARBONFILM RESISTOR	RD1/6PM□□□J
	R651-659 CARBONFILM RESISTOR	RD1/6PM□□□J
	VR453 VARIABLE RESISTOR(100Ω)	RCP1013
	VR651, 652 VR	VRTB6HS223

OTHERS

	CN351	S12B-XH-A-1
	CN402	S8B-XH-A-1

MAIN UNIT

SEMICONDUCTORS

	IC101 PB-EQ AMP IC	CXA1115BP
	IC201 DOLBY B/C IC	CXA1330S
	IC251 DOLBY B/C IC	CXA1330S
	IC501	PD4296A
	IC502 FL STATIC DRIVER IC	LC7570
	IC503 LOGIC IC	TC4066BP
	IC504 IC	BA15218N
	IC505, 506 LOGIC IC	TC4066BP
	IC701 IC	BA15218N
	IC761 IC	BA335
	IC801 IC	BA6218
	IC851 IC	BA6218
⚠	IC1002 REGULATOR IC	NJM78M05FA
⚠	IC1003, 1004 REGULATOR IC	NJM7812FA
⚠	IC1005 REGULATOR IC	NJM79M05FA
	IC1601, 1602 OP-AMP IC	BA15218
	IC1603 DUAL-COMPARATOR IC	M5233L
	IC1801 CMOS LOGIC IC	TC4050BP
	Q101, 102 TRANSISTOR	XDC124ES
	Q103-106 DIGITAL TRANSISTOR	DTC114TS
	Q107-109 TRANSISTOR	XDC124ES
	Q110 DIGITAL TRANSISTOR	XDA114ES
	Q111, 112 N-FET	2SK373
	Q113, 114 TRANSISTOR	2SC3311A
	Q115 TRANSISTOR	XDC124ES
	Q116 DIGITAL TRANSISTOR	XDA114ES
	Q117, 118 N-FET	2SK373
	Q119, 120 TRANSISTOR	2SC3311A
	Q121, 122 TRANSISTOR	XDC124ES
	Q220 DIGITAL TRANSISTOR	XDA114ES
	Q221, 222 TRANSISTOR	XDC124ES
	Q224 DIGITAL TRANSISTOR	XDC144ES
	Q225 TRANSISTOR	XDC124ES
	Q270 DIGITAL TRANSISTOR	XDA114ES
	Q271-273 TRANSISTOR	XDC124ES
	Q274 DIGITAL TRANSISTOR	XDC144ES
	Q275 TRANSISTOR	XDC124ES
	Q501-506 TRANSISTOR	XDC124ES
	Q507 DIGITAL TRANSISTOR	XDC114ES
	Q508 DIGITAL TRANSISTOR	DTA114TS
	Q509 TRANSISTOR	XDC124ES
	Q510 TRANSISTOR	2SA1309A
	Q511 TRANSISTOR	XDC124ES

Mark	No.	Description	Part No.
		Q512 DIGITAL TRANSISTOR	XDA114ES
		Q701, 702 TRANSISTOR	2SD1302
		Q761 DIGITAL TRANSISTOR	XDC114ES
		Q762 DIGITAL TRANSISTOR	DTA114TS
		Q801-803 TRANSISTOR	2SD1858X
		Q804 DIGITAL TRANSISTOR	DTA115TS
		Q805 TRANSISTOR	XDC124ES
		Q806 TRANSISTOR	2SC3311A
		Q807 TRANSISTOR	2SC3246
		Q808 DIGITAL TRANSISTOR	DTC114TS
		Q851-853 TRANSISTOR	2SD1858X
		Q854 DIGITAL TRANSISTOR	DTA115TS
		Q855 TRANSISTOR	XDC124ES
		Q856 TRANSISTOR	2SC3311A
		Q857 TRANSISTOR	2SC3246
		Q858 DIGITAL TRANSISTOR	DTC114TS
⚠		Q1001 TRANSISTOR	2SA1283
		Q1005 TRANSISTOR	2SA1309A
		Q1006, 1007 TRANSISTOR	2SC3311A
		Q1010 TRANSISTOR	2SA1309A
		Q1201-1214 TRANSISTOR	XDC124ES
		Q1251-1264 TRANSISTOR	XDC124ES
		Q1602 DIGITAL TRANSISTOR	DTC114TS
		Q1603, 1604 TRANSISTOR	2SC3311A
		Q1605 DIGITAL TRANSISTOR	DTC114TS
		D101-106 DIODE	1SS254
		D109, 110 DIODE	1SS254
		D113-116 DIODE	1SS254
		D119, 120 DIODE	1SS254
		D226 DIODE	1SS254
		D251-256 DIODE	1SS254
		D501 ZENER DIODE	MTZJ9.1A
		D502-507 DIODE	1SS254
		D761 ZENER DIODE	MTZJ4.3B
		D801 DIODE	1SS252
		D802-806 DIODE	1SS254
		D851 DIODE	1SS252
		D852-856 DIODE	1SS254
		D901-904 DIODE	1SS254
		D911-914 DIODE	1SS254
		D921 DIODE	1SS254
⚠		D1001 DIODE	1SR35-100AVL
⚠		D1002 ZENER DIODE	MTZJ33B
		D1004 ZENER DIODE	MTZJ5.1B
⚠		D1006 DIODE	1SR35-100AVL
		D1009-1011 DIODE	1SS254
⚠		D1012 POWER DIODE	1B2Z1-LC2
⚠		D1013 POWER DIODE	1B2C1-LC2
		D1201 DIODE	1SS254
		D1251 DIODE	1SS254
		D1601-1606 DIODE	1SS254
		D1701-1705 DIODE	1SS254
		D1801-1803 DIODE	1SS254

Mark	No.	Description	Part No.

SWITCHES

	S251	RSH1022
⚠	S1201 SWITCH	RSA-063

COILS/TRANSFORMERS

	L101, 102 COIL	RTF1099
	F201, 202 FILTER	ATF-210
	F251, 252 FILTER	ATF-210

CAPACITORS

	C101, 102 PL. STYRENE CAPACITOR	CQSA431J50
	C103, 104 PL. STYRENE CAPACITOR	CQSA561J50
	C105, 106 PL. STYRENE CAPACITOR	CQSA102J50
	C107-110 ELECTR. CAPACITOR(10/16)	RCH1007
	C111, 112 ELECTR. CAPACITOR(100/10)	RCH1008
	C113, 114 AUDIO FILM CAPACITOR	CFTXA822J50
	C117, 118 ELECTR. CAPACITOR	CEAS4R7M50
	C121, 122 AXIAL CAPACITOR	CKPUYB221K50
	C123, 124 AXIAL CAPACITOR	CKPUYB391K50
	C125 CERAMIC CAPACITOR	CGCYF473Z50
	C129-132 AXIAL CERAMIC C.	CCPUSL100J50
	C133, 134 AXIAL CAPACITOR	CKPUYB681K50
	C135-138 AXIAL CAPACITOR	CKPUYB101K50
	C141, 142 ELECTR. CAPACITOR	CEAS470M16
	C201-204 ELECTR. CAPACITOR	CEAS010M50
	C209, 210 ELECTR. CAPACITOR	CEAS4R7M50
	C211-214 AUDIO FILM CAPACITOR	CFTXA222J50
	C215, 216 ELECTR. CAPACITOR	CEASR22M50
	C217, 218 ELECTR. CAPACITOR	CEASR33M50
	C219, 220 ELECTR. CAPACITOR	CEAS100M50
	C223, 224 ELECTR. CAPACITOR	CEASR33M50
	C225 ELECTR. CAPACITOR	CEAS010M50
	C231, 232 ELECTR. CAPACITOR	CEAS100M50
	C233, 234 ELECTR. CAPACITOR	CEAS010M50
	C235, 236 ELECTR. CAPACITOR	CEAS330M16
	C241 ELECTR. CAPACITOR	CEAS101M16
	C251-254 ELECTR. CAPACITOR	CEAS010M50
	C259, 260 ELECTR. CAPACITOR	CEAS4R7M50
	C261-264 AUDIO FILM CAPACITOR	CFTXA222J50
	C265, 266 ELECTR. CAPACITOR	CEASR22M50
	C267, 268 ELECTR. CAPACITOR	CEASR33M50
	C269, 270 ELECTR. CAPACITOR	CEAS100M50
	C273, 274 ELECTR. CAPACITOR	CEASR33M50
	C275 ELECTR. CAPACITOR	CEAS010M50
	C281, 282 ELECTR. CAPACITOR	CEAS100M50
	C283, 284 ELECTR. CAPACITOR	CEAS010M50
	C285, 286 ELECTR. CAPACITOR	CEAS330M16
	C291 ELECTR. CAPACITOR	CEAS101M16
	C501, 502 AUDIO FILM CAPACITOR	CFTXA223J50
	C503 CERAMIC CAPACITOR	CGCYX104K25
	C504 AUDIO FILM CAPACITOR	CFTXA103J50
	C505, 506 ELECTR. CAPACITOR	CEAS010M50
	C507, 508 ELECTR. CAPACITOR	CEAS100M50
	C509, 510 CERAMIC CAPACITOR	CKCYF103Z50
	C511, 512 AUDIO FILM CAPACITOR	CFTXA332J50
	C513 ELECTR. CAPACITOR	CEAS470M16

IC201, IC251 (CXA1330S)

Pin No.	Volts	Pin No.	Volts
1	6.0	16	12.0
2	6.0	17	6.0
3	6.0	18	6.0
4	6.0	19	0.4
5		20	0.4
6	6.0	21	6.0
7	6.0	22	6.0
8	6.0	23	6.0
9	6.0	24	6.0
10	6.0	25	6.0
11	0.4	26	
12	0.4	27	6.0
13	6.0	28	6.0
14	1.3	29	6.0
15	0.0	30	6.0

IC351(CXA1198AP)

Pin No.	Volts	Pin No.	Volts
1	1.3	9	6.1
2	1.3	10	5.7
3	1.3	11	5.7
4	0.0	12	11.2
5	0.0	13	1.3
6	5.7	14	1.3
7	5.7	15	1.3
8	6.1	16	1.3

IC651 (uPC1297CA)

Pin No.	Volts	Pin No.	Volts
1	4.4	10	1.7
2	0.0	11	0.0
3	4.4	12	0.0
4	0.6	13	0.0
5	0.1	14	0.1
6	0.0	15	0.6
7	0.0	16	4.4
8	0.0	17	0.0
9	0,0	18	12.0

IC801, IC851 (BA6218)

Pin No.	Volts
1	0.0
2	0.0
3	0.0
4	0.0
5	0.0
6	8.5
7	0.0
8	0.0
9	0.0

Mark	No.	Description	Part No.
	C514, 515	CERAMIC CAPACITOR	CKCYF103Z50
	C516	CERAMIC CAPACITOR	CKDYF103Z50
	C701, 702	AXIAL CAPACITOR	CKPUYB101K50
	C703, 704	ELECTR. CAPACITOR	CEAS010M50
	C705	ELECTR. CAPACITOR	CEAS470M16
	C706	CERAMIC CAPACITOR	CGCYF473Z50
	C707, 708	ELECTR. CAPACITOR	CEAS100M50
	C709, 710	AXIAL CAPACITOR	CKPUYB101K50
	C711	ELECTR. CAPACITOR	CEAS470M16
	C712, 713	AXIAL CAPACITOR	CKPUYB101K50
	C761	CERAMIC CAPACITOR	CGCYF473Z50
	C762, 763	ELECTR. CAPACITOR	CEASR10M50
	C764	ELECTR. CAPACITOR	CEASR47M50
	C765, 766	ELECTR. CAPACITOR	CEASR10M50
	C767	CERAMIC CAPACITOR	CGCYF473Z50
	C801	CERAMIC CAPACITOR	CKPUYY103M16
	C802	CERAMIC CAPACITOR	CGCYF473Z50
	C851	CERAMIC CAPACITOR	CKPUYY103M16
	C852	CERAMIC CAPACITOR	CGCYF473Z50
	C1001	ELECTR. CAPACITOR	CEAS471M50
	C1004	ELECTR. CAPACITOR	CEAS330M35
	C1007	ELECTR. CAPACITOR	CEAS472M16
	C1008	CERAMIC CAPACITOR	CGCYF473Z50
	C1009	AUDIO FILM CAPACITOR	CFTXA473J50
	C1010	ELECTR. CAPACITOR	CEAS222M16
	C1011	ELECTR. CAPACITOR	CEAS472M25
	C1012	AUDIO FILM CAPACITOR	CFTXA103J50
	C1013	ELECTR. CAPACITOR	CEAS471M16
	C1014	AUDIO FILM CAPACITOR	CFTXA104J50
	C1015	ELECTR. CAPACITOR	CEAS331M16
	C1016	ELECTR. CAPACITOR	CEAS220M50
	C1018	ELECTR. CAPACITOR	CEAS100M50
	C1020-1023	AUDIO FILM CAPACITOR	CFTXA473J50
	C1024	ELECTR. CAPACITOR	CEAS470M16
	C1025	CERAMIC CAPACITOR	CGCYF473Z50
	C1030	CERAMIC CAPACITOR	CGCYF473Z50
	C1201, 1202	ELECTR. CAPACITOR	CEASR47M50
⚠	C1203	CAPACITOR (CERAMIC) (0.01 μ)	RCG-009
	C1204	ELECTR. CAPACITOR	CEAS4R7M50
	C1251, 1252	ELECTR. CAPACITOR	CEASR47M50
	C1254	ELECTR. CAPACITOR	CEAS4R7M50
	C1601, 1602	ELECTR. CAPACITOR	CEASR22M50
	C1603, 1604	ELECTR. CAPACITOR	CEAS101M16
	C1605	ELECTR. CAPACITOR	CEAS331M16
	C1606	CERAMIC CAPACITOR	CKCYF103Z50
	C1607, 1608	CERAMIC CAPACITOR	CGCYF473Z50
	C1611	CERAMIC CAPACITOR	CGCYF473Z50
	C1613	ELECTR. CAPACITOR	CEAS331M16
	C1614	ELECTR. CAPACITOR	CEAS330M35
	C1615, 1616	ELECTR. CAPACITOR	CEAS100M50
	C1617, 1618	ELECTR. CAPACITOR	CEASR47M50
	C1621	CERAMIC CAPACITOR	CGCYF473Z50
	C1801	CERAMIC CAPACITOR	CGCYF473Z50

Mark	No.	Description	Part No.
RESISTORS			
	R101-114	CARBONFILM RESISTOR	RD1/6PM□□□J
	R117-121	CARBONFILM RESISTOR	RD1/6PM□□□J
	R123-125	CARBONFILM RESISTOR	RD1/6PM□□□J
	R135, 136	CARBONFILM RESISTOR	RD1/6PM□□□J
	R137	METAL OXIDE RESISTOR	RS1LMF□□□J
	R138-142	CARBONFILM RESISTOR	RD1/6PM□□□J
	R145	CARBONFILM RESISTOR	RD1/6PM□□□J
	R147-150	CARBONFILM RESISTOR	RD1/6PM□□□J
	R201-209	CARBONFILM RESISTOR	RD1/6PM□□□J
	R218	CARBONFILM RESISTOR	RD1/6PM□□□J
	R220, 221	CARBONFILM RESISTOR	RD1/6PM□□□J
	R223	CARBONFILM RESISTOR	RD1/2LF□□□J
	R232	CARBONFILM RESISTOR	RD1/6PM□□□J
	R249	CARBONFILM RESISTOR	RD1/6PM□□□J
	R251-259	CARBONFILM RESISTOR	RD1/6PM□□□J
	R268	CARBONFILM RESISTOR	RD1/6PM□□□J
	R270-273	CARBONFILM RESISTOR	RD1/6PM□□□J
	R282	CARBONFILM RESISTOR	RD1/6PM□□□J
	R299	CARBONFILM RESISTOR	RD1/6PM□□□J
	R501, 502	RESISTOR ARRAY	RA4T□□□J
	R503	RESISTOR ARRAY	RA8T□□□J
	R504, 505	CARBONFILM RESISTOR	RD1/6PM□□□J
	R506	RESISTOR ARRAY	RA7T□□□J
	R507, 508	CARBONFILM RESISTOR	RD1/6PM□□□J
	R509	RESISTOR ARRAY	RA11T□□□J
	R510-516	CARBONFILM RESISTOR	RD1/6PM□□□J
	R518-521	CARBONFILM RESISTOR	RD1/6PM□□□J
	R525, 526	CARBONFILM RESISTOR	RD1/6PM□□□J
	R528-531	CARBONFILM RESISTOR	RD1/6PM□□□J
	R549	CARBONFILM RESISTOR	RD1/6PM□□□J
	R701-704	CARBONFILM RESISTOR	RD1/6PM□□□J
	R707-716	CARBONFILM RESISTOR	RD1/6PM□□□J
	R721, 722	CARBONFILM RESISTOR	RD1/6PM□□□J
	R761-763	CARBONFILM RESISTOR	RD1/6PM□□□J
	R765-769	CARBONFILM RESISTOR	RD1/6PM□□□J
	R801	CARBONFILM RESISTOR	RD1/6PM□□□J
	R802	METAL OXIDE RESISTOR	RS2LMF□□□J
	R803-805	CARBONFILM RESISTOR	RD1/6PM□□□J
	R807, 808	CARBONFILM RESISTOR	RD1/6PM□□□J
	R810-812	CARBONFILM RESISTOR	RD1/6PM□□□J
	R814-816	CARBONFILM RESISTOR	RD1/6PM□□□J
	R818	CARBONFILM RESISTOR	RD1/6PM□□□J
	R851	CARBONFILM RESISTOR	RD1/6PM□□□J
	R852	METAL OXIDE RESISTOR	RS2LMF□□□J
	R853-858	CARBONFILM RESISTOR	RD1/6PM□□□J
	R860, 861	CARBONFILM RESISTOR	RD1/6PM□□□J
	R862	CARBONFILM RESISTOR	RD1/2LF□□□J
	R864-866	CARBONFILM RESISTOR	RD1/6PM□□□J
	R868	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1001	CARBONFILM RESISTOR	RD1/2LF□□□J
	R1003	CARBONFILM RESISTOR	RD1/2LF□□□J
	R1007-1012	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1014-1019	CARBONFILM RESISTOR	RD1/6PM□□□J
⚠	R1020	FUSLIBLE RESISTOR	RFA1/4L□□□J

Mark	No.	Description	Part No.
	R1201-1204	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1205, 1206	CARBONFILM RESISTOR	RD1/2LF□□□J
	R1207-1223	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1251-1254	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1255, 1256	CARBONFILM RESISTOR	RD1/2LF□□□J
	R1257-1273	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1601-1608	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1609	METAL OXIDE RESISTOR	RS2LMF□□□J
	R1611-1613	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1615-1623	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1625, 1626	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1641, 1642	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1701	RESISTOR ARRAY	RA5T□□□J
	R1702	LADDER RESISTOR(11K)	RCX1020
	R1703, 1704	CARBONFILM RESISTOR	RD1/6PM□□□J
	VR101-104	VR(22K)	RCP1046
	VR501, 502	VR(22K)	RCP1046
	VR801	VR	VRTG6VS223
	VR802	VR(10K)	RCP1054
	VR851	VR	VRTG6VS223
	VR1201, 1202	VR(22K)	RCP1046
	VR1251, 1252	VR(22K)	RCP1046
OTHERS			
	CN3511, 3512		12JQ-BT
	CN4021, 4022		8JQ-BT
	JA701	4P PIN JACK	RKB1003
	JA1602	JACK	RKN1014
	JA1603, 1604	JACK	RKN1004
	X501	CERAMIC RESONATOR(4.19MHz)	VSS1014

DISPLAY UNIT

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	Q1501, 1502	DIGITAL TRANSISTOR	DTA114TS
	D1501-1506	DIODE	1SS254
	D1507	DIODE	1SS252
	D1510	DIODE	1SS254
SWITCHES			
	S1501-1509	SWITCH	RSG1034
	S1510, 1511	SWITCH	RSH1014
	S1512, 1513		RSH1024
CAPACITORS			
	C1502	ELECTR. CAPACITOR	CEAS2R2M50
RESISTORS			
	R1501-1506	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1508-1512	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1514	CARBONFILM RESISTOR	RD1/6PM□□□J
	VR1501	VARIABLE RESISTOR(5KA)	RCV1057
	VR1502(5KA)		RCV1071
OTHERS			
	CN906		BTMK12S-1S
	CN907		BTMK13S-1S
	V1501		RAW1104

Mark	No.	Description	Part No.

TR SEC UNIT

There is no supply part in this unit.

H. PHONE UNIT

Mark	No.	Description	Part No.
CAPACITORS			
	C1610	CERAMIC CAPACITOR	CGCYF473Z50
OTHERS			
	JA1601	JACK	RKN1002

OPERATE (1) UNIT

Mark	No.	Description	Part No.
SWITCHES			
	S1301-1309	SWITCH	RSG1033

OPERATE (2) UNIT

Mark	No.	Description	Part No.
SWITCHES			
	S1401-1409	SWITCH	RSG1033

6. ADJUSTMENTS

6.1 MECHANICAL ADJUSTMENT

- This adjustment should be performed in the test mode.
- Entering the test mode.

Short JP901 and JP902 briefly. (The unit enters the TEST MODE.)

Mode	Operation	Display
Side I Double speed play	Double speed PLAY is selected while the FAST key (Side I or II) is held down during PLAY mode of side I. (Before selecting another mode, press the STOP key first.)	C-03
Side II Double speed play	Double speed PLAY is selected while the FAST key (Side I or II) is held down during PLAY mode of Side II. (Before selecting another mode, press the STOP key first.)	C-04

To release the TEST MODE, press the side I COUNTER RESET key or turn off the unit.

1. Tape Speed Adjustment and Check

No.	Deck	Mode	Test tape	Adjusting points	Specifications/Ratings (playback frequency)	Remarks
1	I	Normal speed PLAY	STD-301 (3 kHz)	After playing back for 1 minute.		
2		Double speed PLAY		check	6000 Hz ± 600 Hz	
3		Normal speed PLAY		VR851	3000 Hz ± 5 Hz	
4	II			After checking, play back on deck II.		
5		Double speed PLAY		After playing back for 1 minute.		
6		Normal speed PLAY		VR802	Within ± 10 Hz of the value measured in step 2 (deck I)	
7				After checking.		
8				VR801	3000 Hz ± 5 Hz	

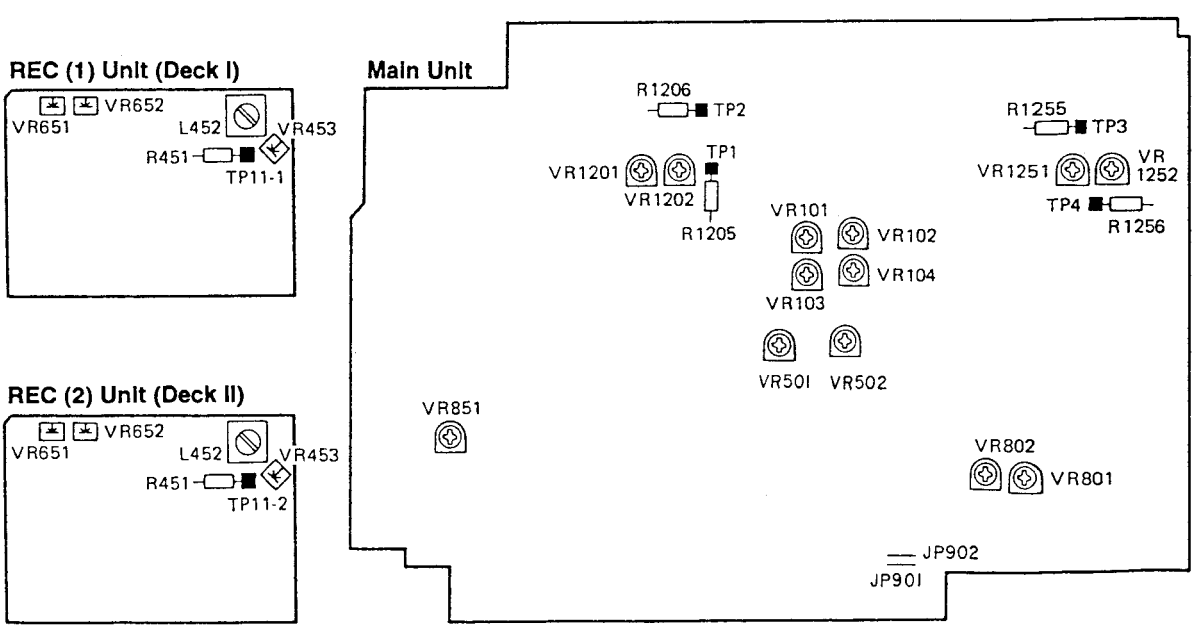

Fig. 6–1 Adjusting Points

6.2 ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBV=1 Vrms.
5. Connect a 50 kΩ (or between 47k to 52 kΩ) load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Test Tapes

STD–331E : Playback adjustments (See Fig. 6–2)
STD–631 : NORMAL blank tape
STD–621 : CrO_2 blank tape
STD–610 : METAL blank tape

*As the reference recording level is 250 nwb/m for STD–331E, the recording level will be higher by 4 dB for STD–331B (160 nwb/m). When adjusting, pay carefull attention to the type of tape used.

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Bias oscillator adjustment.
2. Erase current adjustment.
3. Recording bias adjustment.
4. Recording level adjustment.
5. Level meter check.
6. Leader tape detection operation adjustment.
7. AUTO BLE adjustment.

NOTE: This unit has an automatic tape selection feature.

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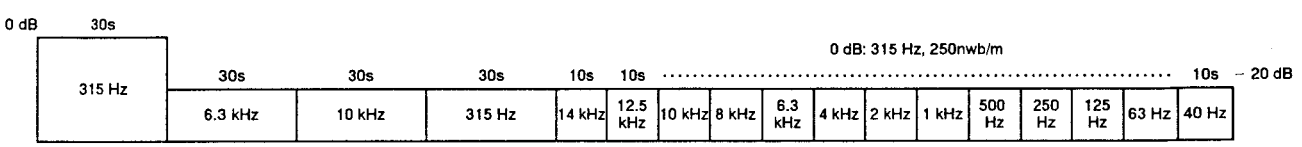


Fig. 6–2 Constants of the test tape STD–331E

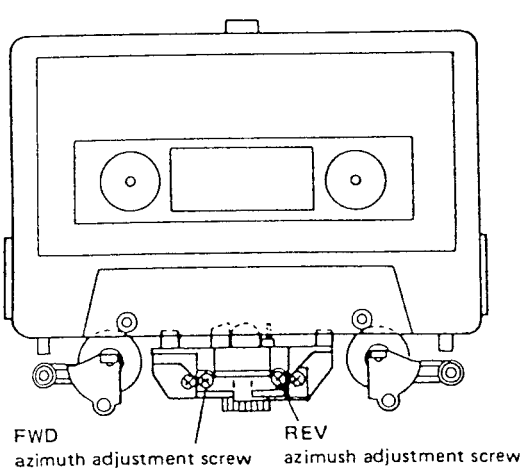


Fig. 6–3 Head azimuth adjustment

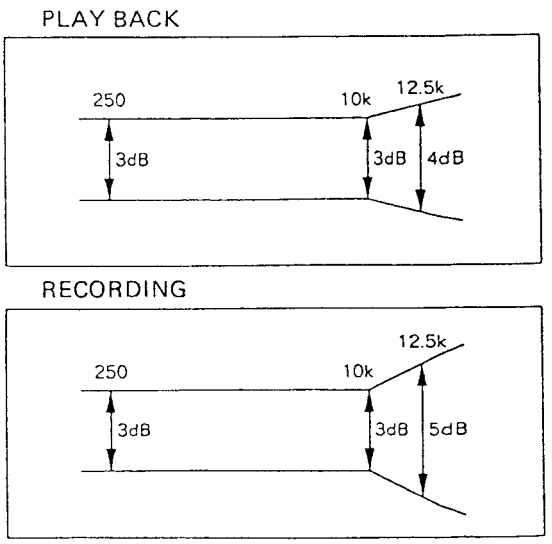


Fig. 6–4 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR101, 102 (Deck I) or VR103, 104 (Deck II) to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/–20 dB section of STD–331E test tape.	Head azimuth adjustment screw. (See Fig. 6–3)	LINE OUT	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/0 dB section of the STD–331E test tape.	Deck I	VR103 (Lch) VR104 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	–6.7 dBV	
			Deck II	VR101 (Lch) VR102 (Rch)	TP. 3 (Lch) TP. 4 (Rch)		

RECORDING SECTION

1. Bias Oscillator Adjustment

- Adjust the bias oscillator with checks set to recording mode simultaneously. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD–610 test tape with no input signal.	Deck I	L452	TP. 11–1	105kHz $\pm \frac{3}{0.5}$ kHz	
			Deck II	L452	TP. 11–2		

2. Erase Current Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD–610 test tape with no input signal.	Deck I	VR453	TP. 11–1	170 mV AC	
			Deck II	VR453	TP. 11–2		

3. Recording Bias Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)
- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC	Record the 315 Hz and 6.3 kHz signals at –20 dBV input level and playback.	Deck I	VR651 (Lch) VR652 (Rch)	LINE OUT	Repeatedly record, playback and adjust so that the plyaback level of 6.3 kHz signal becomes 1.0 dB ± 0.5 dB when compared with the 315 Hz signal.	
			Deck II	VR651 (Lch) VR652 (Rch)			

4. Recording Level Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC/ PAUSE	Apply a 315 Hz/0 dBV signal to the line input terminals, load the STD-631 test tape.	REC level control volume		TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBV	
3	STOP	Set the DOLBY NR switch to the ON position. (DOLBY B)					
4.	REC/ PLAY	Record the above signal onto the STD-631 test tape, and playback.	Deck I	VR1201 (Lch) VR1202 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes -11.2 dB.	
			Deck II	VR1251 (Lch) VR1252 (Rch)			
5.	STOP	Set the TAPE SELECTOR switch to the CrO2 position.					
6.	REC/ PLAY	Record the above signal onto the STD-621 test tape, and playback.	Check		TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBV ± 1.5 dB	
7.	STOP	Set the TAPE SELECTOR switch to the METAL position.					
8.	REC/ PLAY	Record the above signal onto the STD-610 test tape, and playback.	Check		TP. 1 (Lch) TP. 2 (Rch)	-11.2 dBV ± 1.5 dB	

5. Level Meter Check

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC/ PAUSE	Apply a 315 Hz/-10 dBV (316 mV) signal to the Line Input terminals.	REC level control volume	TP. 1 (Lch) TP. 2 (Rch)	Check that the level meters "0 dB" light up within -7.2 dB ± 2 dB of the signal output level.	

6. AUTO BLE Adjustment

- BLE adjustment must be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the test mode. (Refer to page 25.)

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	–	Set to the test mode.	–	–	–	
2.		Press the PARALLEL REC key on the front panel.	Level meter	VR501	Adjust so that -3 dB lights on the level meter.	400 Hz adjustment
3.		Press the NORMAL SPEED key.		VR502	Adjust so that -3 dB lights on the level meter.	10 kHz adjustment

6. REGLAGE

6.1 RÉGLAGES MECANIQUES

- Ce réglage doit être effectué dans le mode d'essai.
- Passage au mode d'essai.

Court-circuiter brièvement JP901 et JP902. (L'appareil passe dans le MODE D'ESSAI).

Mode	Opération	Indication
Lecture (PLAY) double vitesse pour le côté I	La lecture double vitesse est sélectionnée lorsque la touche FAST (côté I ou II) est maintenue enfoncée pendant le mode lecture (PLAY) du côté I. (Avant de sélectionner un autre mode, appuyer tout d'abord sur la touche STOP).	C-03
Lecture (PLAY) double vitesse pour le côté II	La lecture double vitesse est sélectionnée lorsque la touche FAST (côté I ou II) est maintenue enfoncée pendant le mode lecture (PLAY) du côté II. (Avant de sélectionner un autre mode, appuyer tout d'abord sur la touche STOP).	C-04

Pour sortir du MODE D'ESSAI, appuyer sur la touche COUNTER RESET du côté I ou mettre l'appareil hors circuit.

1. Réglage et vérification de la vitesse de defilement de la bande

No.	Platine	Mode	Bande test	Points de réglage	Spécifications/valeurs (fréquence de lecture)	Remarques
1	I	Lecture à vitesse normale	STD-301 (3 kHz)	Après reproduction pendant 1 minute.		
2		Lecture à vitesse double		Vérifier	6000 Hz ± 600 Hz	
3		Lecture à vitesse normale		VR851	3000 Hz±5 Hz	
4	II			Après le contrôle, reproduire sur la Platine II.		
5		Lecture à vitesse double		Après reproduction pendant 1 minute.		
6		Lecture à vitesse normale		VR802	Dans la limite de +/− 10 Hz de la valeur mesurée à l'étape 2 (Platine I).	
7				Après le contrôle		
8				VR801	3000 Hz±5 Hz	

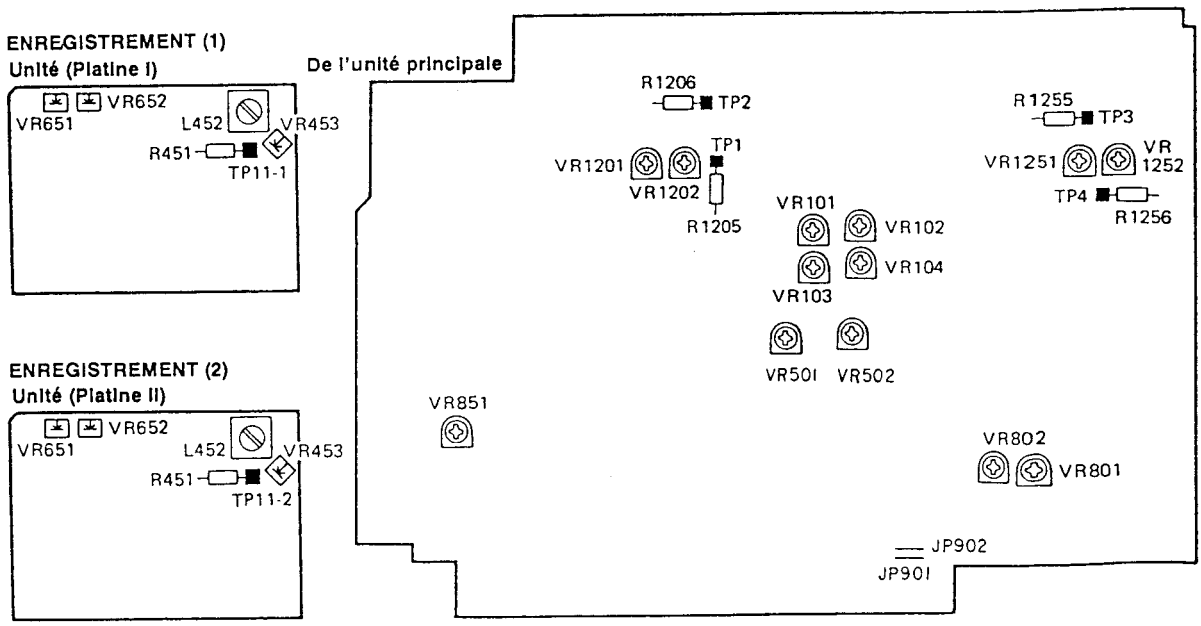


Fig. 6–1 Points de réglage

6.2 REGLAGES ELECTRIQUES

Conditions de réglage

1. Les réglages mécaniques doivent tout d'abord être terminés.
2. Les têtes doivent être nettoyées et démagnétisées.
3. Mettre la platine sous tension et la laisser chauffer pendant au moins quelques minutes avant de commencer les réglages électriques.
4. Le signal de référence est de 0 dBV=1 Vrms.
5. Connecter une résistance de charge de 50 kΩ (tolérance 47k à 52 kΩ) aux bornes de sortie (OUTPUT).
6. Sauf indication contraire, les commutateurs ci–dessous doivent être laissés sur les positions indiquées.
   DOLBY NR : OFF
   Sélecteur de bande : NORM
   (TAPE SELECTOR)

Bandes d'essai

STD–331E : Réglages de la lecture (Voir fig. 6–2)
STD–631 : Bande vierge de type normal
STD–621 : Bande vierge de type chrome
STD–610 : Bande vierge de type métal

Liste des réglages

Sections de lecture

1. Réglage de l'azimut de la tête.
2. Réglage du niveau de lecture.

Sections d'enregistrement

1. Réglage de l'oscillateur de polarisation.
2. Réglage du courant d'effacement.
3. Réglage de la polarisation d'enregistrement.
4. Réglage du niveau d'enregistrement.
5. Vérification de l'indicateur de niveau.
6. Réglage du fonctionnement de la détection de bande amorce.
7. Réglage de AUTO BLE

REMARQUE:
Cette unité est dotée d'une sélection automatique de bande.

* Le niveau d'enregistrement de référence étant de 250 nwb/m pour le STD–331E, le niveau d'enregistrement sera supérieur de 4 dB pour le STD–331B (160 nwb/m). Pour le réglage, tenir compte du type de bande utilisé.

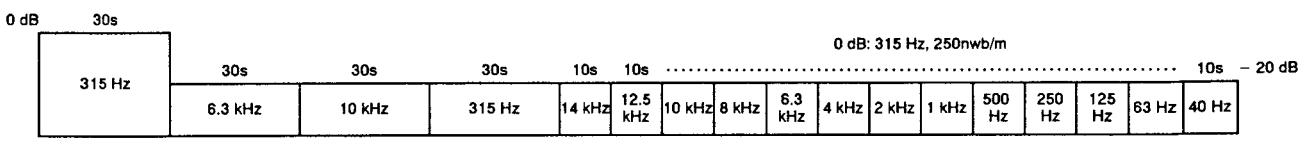


Fig. 6–2 Constantes de la bande d'essai STD–331E

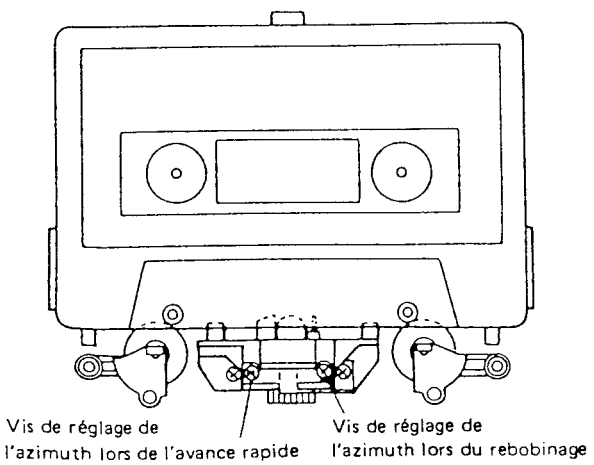


Fig. 6–3 Réglage de l'azimut de la tête

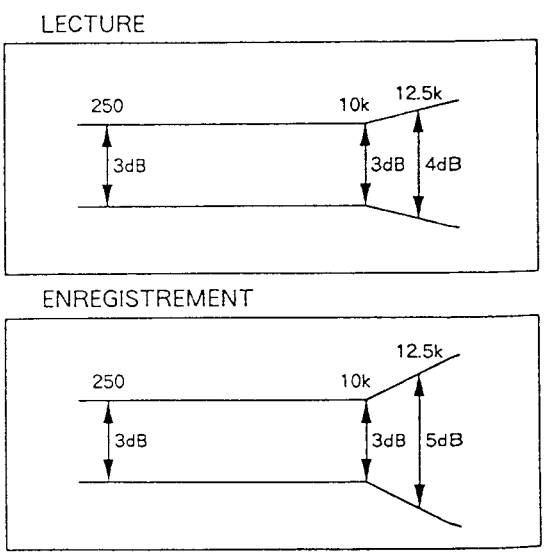


Fig. 6–4 Zone de réponse en fréquence

SECTION DE LECTURE

1. Réglage de l'azimut de la tête

- Tourner VR 101, 102 (Platine I) ou VR103, 104 (Platine II) sur leur position centrale mécanique.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 10 kHz/–20 dB de la bande d'essai STD–331E.	Vis de réglage de l'azimut de la tête. (Voir fig. 6–3)	Sortie de ligne (LINE OUT)	Niveau du signal de reproduction maximum.	
2.	STOP	Verrouiller la vis avec le verrouillage de vis après avoir terminé le réglage.				

2. Réglage du niveau de lecture

- Ce réglage détermine le niveau DOLBY NR et il doit être effectué très soigneusement.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 315 Hz/0 dB de la bande d'essai STD–331E.	Platine I	VR103 (can. G) VR104 (can. D)	TP. 1 (can. G) TP. 2 (can. D)	–6.7 dBV	
			Platine II	VR101 (can. G) VR102 (can. D)	TP. 3 (can. G) TP. 4 (can. D)		

SECTION D'ENREGISTREMENT

1. Réglage de l'oscillateur de polarisation

- Régler l'oscillateur de polarisation, les platines étant réglées simultanément dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	REC	Charger la bande d'essai STD–610 et n'introduire aucun signal.	Platine I	L452	TP. 11–1	105kHz $\pm \frac{3}{0.5}$ kHz	
			Platine II	L452	TP. 11–2		

2. Réglage du courant d'effacement

- Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	REC	Charger la bande d'essai STD–610 et n'introduire aucun signal.	Platine I	VR453	TP. 11–1	170 mV AC	
			Platine II	VR453	TP. 11–2		

3. Réglage de la polarisation d'enregistrement

- Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)
- Après le réglage, des précautions doivent être prises pour éviter une sous-polarisation en vérifiant le taux de distorsion.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.					
2.	REC	Enregistrer les signaux 315 Hz et 6,3 kHz à un niveau d'entrée de –20 dBV et les reproduire.	Platine I	VR651 (can. G) VR652 (can. D)	Sortie de ligne (LINE OUT)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau de lecture du signal 6,3 kHz devienne 1.0 dB ± 0,5 dB lorsqu'il est comparé avec le signal 315 Hz.	
			Platine II	VR651 (can. G) VR652 (can. D)			

4. Réglage du niveau d'enregistrement

- Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.					
2.	REC/ PAUSE	Appliquer un signal de 315 Hz/0 dBV aux bornes d'entrée de ligne, charger la bande d'essai STD-631.	Volume de la commande de niveau d'enregistrement.		TP. 1 (can. G) TP. 2 (can. D)	-11,2 dBV	
3.	STOP	Régler le commutateur DOLBY NR sur la position ON. (DOLBY B)					
4.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-631 et le reproduire.	Platine I	VR1201 (can. G) VR1202 (can. D)	TP. 1 (can. G) TP. 2 (can. D)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau du signal devienne -11,2 dB.	
			Platine II	VR1251 (can. G) VR1252 (can. D)			
5.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position CrO2.					
6.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-621 et le reproduire.	Vérifier		TP. 1 (can. G) TP. 2 (can. D)	-11,2 dBV + 1,5 dB	
7.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position METAL.					
8.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-610 et le reproduire.	Vérifier		TP. 1 (can. G) TP. 2 (can. D)	-11,2 dBV + 1,5 dB	

5. Vérification de l'indicateur de niveau

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	REC/ PAUSE	Appliquer un signal de 315 Hz/-10 dBV (316 mV) aux bornes d'entrée de ligne.	Volume de la commande de niveau d'enregistrement	TP. 1 (can. G) TP. 2 (can. D)	Vérifier que les indicateurs de niveau "0 dB" s'allument dans la limite de -7.2 dB ± 2 dB du niveau de sortie du signal.	

6. Réglage de AUTO BLE

- Le réglage de BLE doit être effectués que tous les autres réglages ont été complétés.
- Ce réglage doit être effectué dans le mode d'essai.
- Passage au mode d'essai. (Se reporter page 29.)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	-	Régler dans le mode d'essai.	-	-	-	
2.		Appuyer sur la touche PARALLEL REC du panneau avant.	Indicateur de niveau.	VR501	Régler afin que -3 dB clignote sur l'indicateur de niveau.	Réglage 400 Hz
3.		Appuyer sur la touche NORMAL SPEED.		VR502	Régler afin que -3 dB clignote sur l'indicateur de niveau.	Réglage 10 kHz

6. AJUSTE

6.1 AJUSTE MECANICO

- Este ajuste debe efectuarse en el modo de prueba.
- Cómo poner el modo de prueba

Cortocircuite JP901 y JP902 durante un corto tiempo. (La unidad se pondrá en el MODO DE PRUEBA).

Mode	Operatión	Indicación
Reproducción a doble velocidad para el lado I	La reproducción a doble velocidad se selecciona al mantener pulsada la tecla FAST (lado I o II) durante la reproducción del lado I. (Antes de seleccionar otro modo, pulse primero la tecla STOP).	C-03
Reproducción a doble velocidad para el lado II	La reproducción a doble velocidad se selecciona al mantener pulsada la tecla FAST (lado I o II) durante la reproducción del lado II. (Antes de seleccionar otro modo, pulse primero la tecla STOP).	C-04

Para cancelar el modo de prueba, pulse la tecla COUNTER RESET del lado I o desconecte la alimentación de la unidad.

1. Ajuste y verificación de la velocidad de cinta

No.	Platina	Modo	Cinta de prueba	Puntos de ajuste	Especificaciones/valores nominales (frecuencia de reproducción)	Comentarios
1	I	PLAY (velocidad normal)	STD-301 (3 kHz)	Después de reproducir durante 1 minuto.		
2		PLAY (velocidad doble)		Verificar	6000 Hz ± 600 Hz	
3		PLAY (velocidad normal)		VR851	3000 Hz ± 5 Hz	
4	II			Después de verificar, reproduzca en la platina II.		
5		PLAY (velocidad doble)		Después de reproducir durante 1 minuto.		
6		PLAY (velocidad normal)		VR802	Dentro de +/− 10 Hz del valor medido en el paso 2 (platina I).	
7				Después de verificar.		
8				VR801	3000 Hz ± 5 Hz	

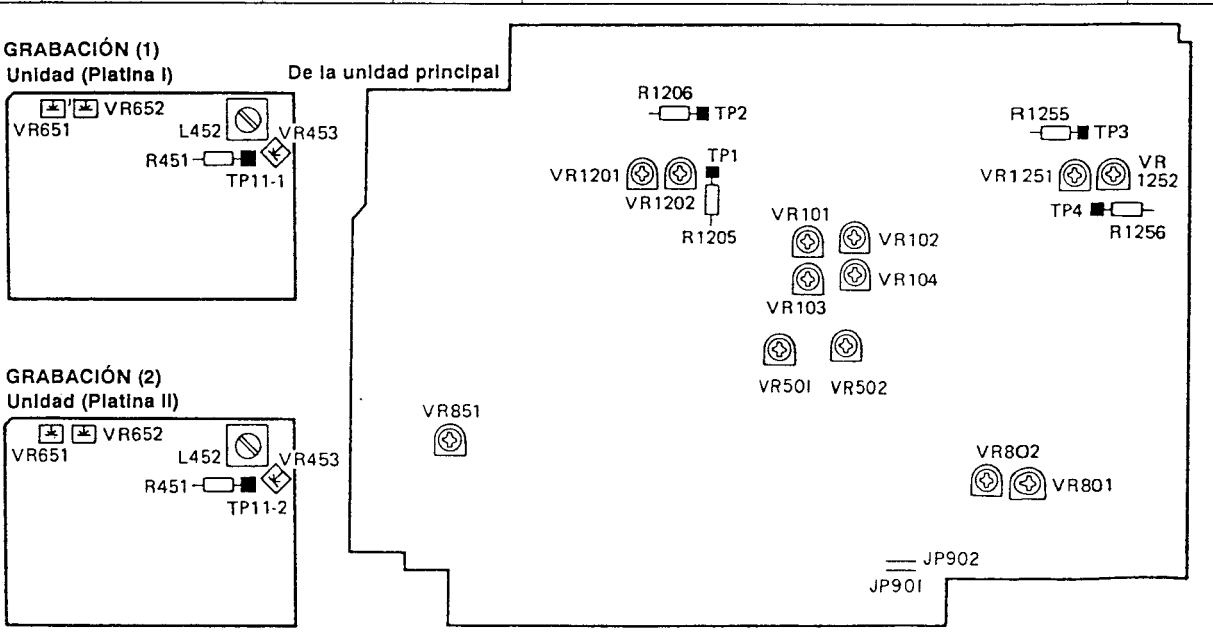


Figura 6–1 Puntos de ajuste

6.2 AJUSTES ELÉCTRICOS

Condiciones de ajuste

1. Los ajustes mecánicos deben haberse completado primero.
2. La cabeza debe estar limpia y desmagnetizada.
3. Encienda la alimentación para permitir que la platina se caliente durante unos pocos minutos por lo menos antes de realizar cualquier ajuste eléctrico.
4. La señal de referencia es de 0 dBV=1 Vrms.
5. Conecte una resistencia de 50 kΩ (o entre 47k y 52 kΩ) en los terminales OUTPUT.
6. A menos que se especifique lo contrario, los conmutadores indicados más abajo deben dejarse en las posiciones indicadas.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Cintas de prueba

STD-331E : Ajustes de reproducción (Consulte la figura 6-2)
STD-631 : Cinta virgen NORMAL
STD-621 : Cinta virgen de CrO2
STD-610 : Cinta virgen de METAL

Lista de ajustes

Secciones de reproducción

1. Ajuste de azimut de la cabeza
2. Ajuste del nivel de reproducción

Secciones de grabación

1. Ajuste del oscillador de polarización
2. Ajuste de la corriente de borrado
3. Ajuste de la polarización de grabación
4. Ajuste del nivel de grabación
5. Verificación del medidor de nivel
6. Ajuste de la operación de detección del extremo inicial de cinta
7. Ajuste BLE automático

NOTA:
Esta unidad posee una función de selección automática de cinta.

* Como el nivel de grabación de referencia es igual a 250 nwb/m para el STD-331E, el nivel de grabación será 4 dB mayor para el STD-331B (160 nwb/m). Al realizar el ajuste, preste suma atención al tipo de cintá que se está utilizando.

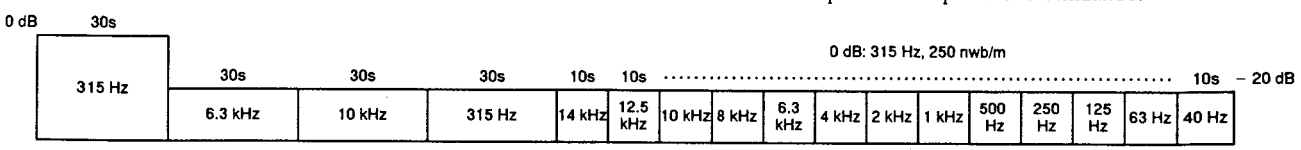


Figura 6-2 Constantes de la cinta de prueba STD-331E

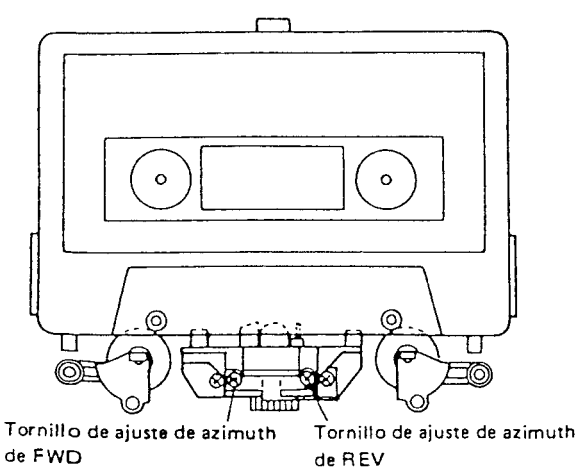


Figura 6-3 Ajuste de azimut de la cabeza

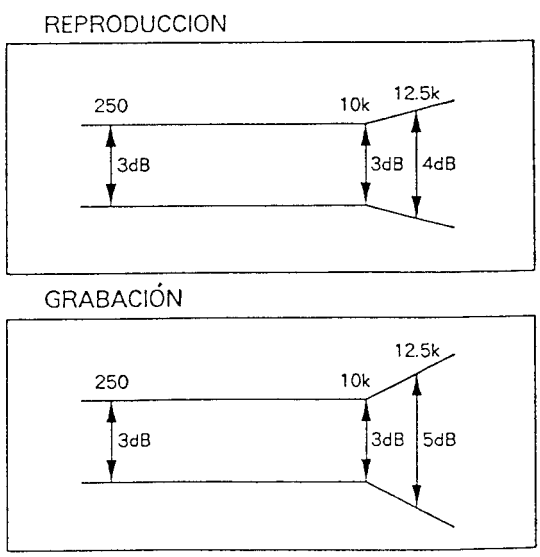


Figura 6-4 Zona de respuesta de frecuencia

SECCIÓN DE REPRODUCCIÓN

1. Ajuste del azimut de la cabeza

- Poner VR101, 102 (platina I) o VR103, 104 (platina II) en las posiciones del centro mecánico.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Reproduzca la sección de 10 kHz/–20 dB de la cinta de prueba STD–331E.	Tornillo de ajuste del azimut de la cabeza. (Vea la figura 6–3)	LINE OUT	Nivel máximo de la señal de reproducción.	
2.	STOP	Bloquee el tornillo con su cierre una vez finalizado el ajuste.				

2. Ajuste del nivel de reproducción

- Este ajuste determina el nivel DOLBY NR y debe realizarse con mucho cuidado.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Produzca la parte de 315 Hz/0 dB de la cinta de prueba STD–331E.	Platina I	VR103 (Lch) VR104 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	–6.7 dBV	
			Platina II	VR101 (Lch) VR102 (Rch)	TP. 3 (Lch) TP. 4 (Rch)		

SECCIÓN DE GRABACIÓN

1. Ajuste del oscilador de polarización

Ajuste el oscilador de polarización con los platinas puestas simultáneamente en el modo de grabación. (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	REC	Introduzca la cinta de prueba STD–610 sin señal de entrada.	Platina I	L452	TP. 11–1	105kHz $\pm \frac{3}{0.5}$ kHz	
			Platina II	L452	TP. 11–2		

2. Ajuste de la corriente de borrado

- Ajuste el oscilador de polarización con las platinas I y II puestas independientemente en el modo de grabación. → (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	REC	Introduzca la cinta de prueba STD–610 sin señal de entrada.	Platina I	VR453	TP. 11–1	170 mV AC	
			Platina II	VR453	TP. 11–2		

3. Ajuste de polarización de grabación

- Ajuste el oscilador de polarización estando las platinas I y II ajustadas independientemente para el modo de grabación. → (Doble G/R sólo)
- Una vez finalizado el ajuste, compruebe el porcentaje de distorsión para no obtener subpolarización.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.					
2.	REC	Grabe la señal de 315 Hz y 6,3 kHz a un nivel de entrada de –20 dBV y reprodúzcala.	Platina I	VR651 (Lch) VR652 (Rch)	LINE OUT	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción de 6,3 kHz sea de 1.0 dB ± 0,5 dB cuando se compare con la señal de 315 Hz.	
			Platina II	VR651 (Lch) VR652 (Rch)			

4. Ajuste del nivel de grabación

- Ajuste el oscilador de polarización con las platinas I y II puestas independientemente en el modo de grabación. → (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.					
2.	REC/ PAUSE	Aplique una señal de 315 Hz/0 dBV a los terminales de entrada de línea e introduzca la cinta de prueba STD-631.	Control de nivel de grabación.		TP. 1 (Lch) TP. 2 (Rch)	-11,2 dBV	
3	STOP	Ponga el conmutador DOLBY NR en la posición ON. (DOLBY B)					
4.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-631 y reprodúzcala.	Platina I	VR1201 (Lch) VR1202 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción sea de -11,2 dB.	
			Platina II	VR1251 (Lch) VR1252 (Rch)			
5.	STOP	Ponga el conmutador TAPE SELECTOR en la posición CrO2.					
6.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-621 y reprodúzcala.	Verifique		TP. 1 (Lch) TP. 2 (Rch)	-11,2 dBV ± 1,5 dB	
7.	STOP	Ponga el conmutador TAPE SELECTOR en la posición METAL.					
8.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-610 y reprodúzcala.	Verifique		TP. 1 (Lch) TP. 2 (Rch)	-11,2 dBV ± 1,5 dB	

5. Verificación del medidor de nivel

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	REC/ PAUSE	Aplique una señal de 315 Hz/-10 dBV (316 mV) a los terminales de entrada de línea.	Control de nivel de grabación	TP. 1 (Lch) TP. 2 (Rch)	Verifique si se encienden los medidores de nivel "0 dB" cuando el nivel de salida de la señal sea -7.2 dB ± 2 dB.	

6. Ajuste BLE Automático

- El ajuste BLE debe efectuarse después de haber terminado todos los otros ajustes.
- Este ajuste debe efectuarse en el modo de prueba.
- Cómo poner el modo de prueba. (consúltese la página 33.)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	-	Ponga el modo de prueba.	-	-	-	
2.		Pulse la tecla PARALLEL REC del panel delantero.	Medidor de nivel	VR501	Ajuste de modo que parpadee -3 dB en el medidor de nivel.	Ajuste de 400 Hz
3.		Pulse la tecla NORMAL SPEED.		VR502	Ajuste de modo que parpadee -3 dB en el medidor de nivel.	Ajuste de 10 kHz

7. FOR CT-W901R/HEM, HB AND CT-W951R/SD TYPES

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

CT-W901R/HEM, HB, CT-W951R/SD and CT-W901R/KUC have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks
		CT-W901R/ KUC	CT-W901R/ HEM	CT-W901R/ HB	CT-W951R/ SD	
⊙	Mother unit	RWM1509	RWM1508	RWM1508	RWM1508	
	└ Main unit	Non supply	Non supply	Non supply	Non supply	
⊙	Sub unit	RWM1512	RWM1510	RWM1510	RWM1511	
	└ Display unit	Non supply	Non supply	Non supply	Non supply	
⚠	AC power cord	PDG1015	PDG1003	PDG1036	PDG1013	
⚠	Strain relief	CM-22C	CM-22B	CM-22B	CM-22B	
⚠	Voltage selector (AC110/120-127/220/240V)	.....	.....	.....	PSB1002	
⚠	FU1001, 1002 (1.5A/125V) Fuse	REK1001	.....	.....	.....	
⚠	FU1001, 1002 (T1.6A/250V) Fuse	.....	REK-102	REK-102	REK-102	
⚠	Power transformer (AC120V)	RTT1162	.....	.....	.....	
⚠	Power transformer (AC220-230/240V)	.....	RTT1163	RTT1163	.....	
⚠	Power transformer (AC110/120-127/220/240V)	.....	.....	.....	RTT1164	
	Front panel assembly	RXX1462	RXX1461	RXX1461	RXX1478	
	FL filter	RAH1596	RAH1597	RAH1597	RAH1672	
	FL lens	RAH1594	RAH1594	RAH1594	RAH1567	
	Packing case	RHG1323	RHG1322	RHG1322	RHG1335	
	Connection cord (Mini)	PDE-319	.....	.....	.....	
	Operating instructions (Spanish)	.....	.....	.....	RRD1123	
	Operating instructions (German/Italian/Dutch/Swedish/ Spanish/Portuguese)	.....	RRD1121	.....	.....	
	Remote control unit (CU-T015)	.....	.....	.....	RPX1057	
	Polyethylene bag	.....	.....	.....	RHL1001	for remote control
	Battery cover	.....	.....	.....	PZN1010	for remote control

MAIN UNIT

Main unit of CT-W901R/HEM, HB, CT-W951/SD and main unit of CT-W901R/KUC have the same construction except for the following:

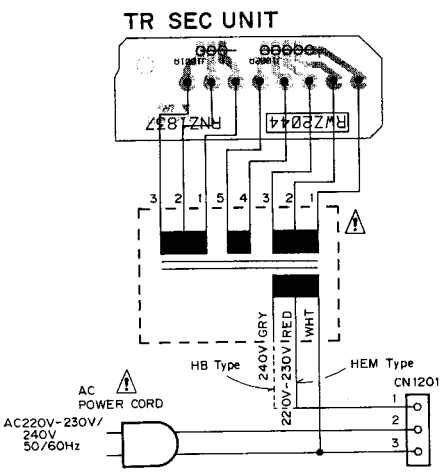
Mark	Symbol & Description	Part No.		Remarks
		CT-W901R/KUC	CT-W901R/HEM, HB and CT-W951R/SD	
	D1604-1606	1SS254	.....	
	C1608	CGCYF473Z50	.....	
	JA1603, 1604	RKN1004	.....	

DISPLAY UNIT

Display unit of CT-W901R/HEM, HB, CT-W951R/SD and display unit of CT-W901/KUC have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		CT-W901R/KUC	CT-W901R/ HEM and HB	CT-W951R/SD	
	V1501 IC1501	RAW1104	RAW1103	RAW1104 HC-177	 Remote control sensor

POWER supply section for HEM and HB type



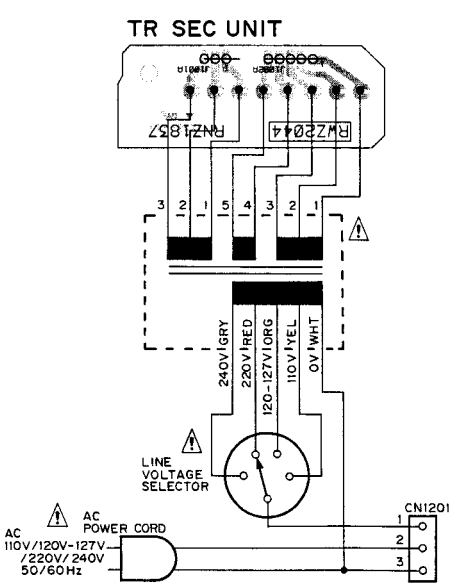
Line Voltege Selection

Line voltage can be changed with the following steps

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the power transformer primary taps.
4. Stick the line voltage lavel on the rear panel.

Port NO.	Discription		
AXX-193	220V lavel	————	220-230V
AXX-192	240V lavel	--------	240V

POWER supply section for SD type



8. SPECIFICATIONS

System ..... 4 track, 2-channel stereo
Heads ..... "Hard Permalloy" recording/playback head × 2
"Ferrite" erasing head × 2
Motor ..... DC servo capstan motor × 2
DC reel motor × 2
Wow and Flutter ..... No more than 0.055% (WRMS) (JIS)
No more than ±0.16% (DIN)
Fast Winding Time ..... Approximately 90 seconds
(C-60 tape)

Frequency Response
−20 dB recording:
TYPE IV (Metal) tape ..... 20 to 20,000 Hz
TYPE II (Chrome) tape ..... 20 to 19,000 Hz
TYPE I (Normal) tape ..... 20 to 18,000 Hz
Signal-to-Noise Ratio
Dolby NR OFF ..... More than 57 dB
Noise Reduction Effect
Dolby B-type NR ON ..... More than 10 dB (at 5 kHz)
Dolby C-type NR ON ..... More than 19 dB (at 5 kHz)
Harmonic Distortion ..... No more than 0.7%
(at −4 dB: 160 nwb/m)
Input (Sensitivity)
LINE (INPUT) ..... 100 mV (Input impedance 57 kΩ)
Output (Reference level)
LINE (OUTPUT) ..... 0.5 V (Output impedance 3.2 kΩ)
Headphone ..... 0.63 mW (Load impedance 8 Ω)

Subfunctions

- Twin AUTO BLE system
- Double recording/playback reverse
- DOLBY HX PRO recording function
- DOLBY B/C types NR
- Relay recording
- Parallel recording
- Music search over ±15 selections
- High-speed and normal-speed copy (DECK I→DECK II)
- Relay playback/blank skip
- CD•DECK SYNCHRO recording capability
- Peak level meter with peak-hold function
- Automatic space recording mute
- Automatic tape selector
- SR System remote control available
(U.S. and Canadian models only)
- TIMER Recording
- TIMER Playback (Automatic relay on)
- 2-mode electronic 4-digit twin tape counter
- Headphone jack
- Wireless remote control operation (CT-W951R only)
- Copy level control (normal speed copy)
- Dolby NR type convertible copy (normal speed copy)

Miscellaneous

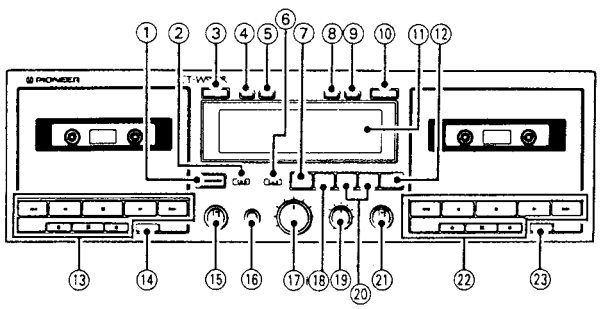
Power Requirements
U.S., Canadian models ..... AC 120V, 60 Hz
U.K. model ..... AC 230—240 Volts~, 50/60 Hz
European models ..... AC 220—230 Volts~, 50/60 Hz
Multi-voltage models ..... AC 110V/120V—127V/220V/240V
(switchable), 50/60 Hz
Power Consumption 32W
Dimensions ..... 420(W) × 135(H) × 318.5(D) mm
16-9/16(W) × 5-5/16(H) × 12-7/16(D) in
Weight (without package)
(Except for multi-voltage models) ..... 5.7 kg (12 lb 6 oz.)
(Multi-voltage models) ..... 5.9 kg (13 lb)

Accessories

Operating instructions 1
Connection cord with pin plugs 2
SR Remote control cord
(U.S. and Canadian models only) 1
CD•DECK SYNCHRO control cord 1
Remote control unit (CT-W951R only) 1
Dry cell batteries (size AAA/IEC R03) (CT-W951R only) 2

NOTE:
Specifications and design subject to possible modifications without notice, due to improvements.

9. PANEL FACILITIES



① **Power switch (POWER ■OFF/▬ON)**
② **Timer mode switch (TIMER MODE REC/OFF/PLAY)**
③ **DECK I eject button (⏏)**
Stop a tape running before opening the door.
④ **DECK I counter reset button (RESET)**
⑤ **DECK I counter mode button (TIME/COUNT)**
⑥ **Reverse mode switch (REVERSE MODE)**
⑦ **Relay/skip button (RELAY/SKIP)**
⑧ **DECK II counter reset button (RESET)**
⑨ **DECK II counter mode button (TIME/COUNT)**
⑩ **DECK II eject button (⏏)**
Stop a tape running before opening the door.
⑪ **Function display**
⑫ **CD•DECK SYNCHRO recording button (CD SYNCHRO)**
⑬ **DECK I operation buttons**
◀◀/MS: Fast reverse/music search
◀ : Reverse playback
■ : Stop
▶ : Forward playback
▶▶/MS: Fast forward/music search
O : Recording mute
❚❚ : Pause
● : Recording
⑭ **DECK I AUTO BLE button**
⑮ **DECK I Dolby* NR switch (DOLBY NR B/OFF/C)**

*
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⑯ **Headphones jack (PHONES)**
⑰ **Recording level control (REC LEVEL)**
⑱ **Parallel recording button (PARALLEL REC)**
⑲ **Copying level control (COPY LEVEL)**
⑳ **Synchro copy buttons (SYNCHRO COPY)**
NORMAL SPEED: Normal speed copy
HIGH SPEED : Double speed copy
㉑ **DECK II Dolby* NR switch (DOLBY NR B/OFF/C)**
㉒ **DECK II operation buttons**
◀◀/MS: Fast reverse/music search
◀ : Reverse playback
■ : Stop
▶ : Forward playback
▶▶/MS: Fast forward/music search
O : Recording mute
❚❚ : Pause
● : Recording
㉓ **DECK II AUTO BLE button**

FEATURES OF AUTO BLE

With commercially available cassette tapes, sensitivity and frequency characteristics might differ slightly from one another, even though the same sound adjustment is set for them. To utilize tape characteristics to the maximum possible and realize an ideal recording which reproduces the source exactly, optimum recording level (sensitivity) and equalizer values must be set accordingly for each tape. In many conventional tape decks, standard values are fixed for standard tapes, thus nullifying the subtle differences between individual tapes. Perfect tuning by ear through use of fine adjustment controllers for bias and sensitivity is difficult and requires a lot of effort. It is especially difficult with a 2-head deck where the recording sound cannot be monitored.
The AUTO BLE on this unit automatically adjusts bias, level and equalizer by using a microprocessor to set the optimum recording characteristics accordingly for each tape.